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GIVEN BEFORE THE
INDIAN COAL COMMITTEE

1924-25

VOLUME II



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* In Vol. II unless otherwise stated.

VOLUME II.

NOTE.

This volume contains the evidence given by witnesses who represented firms interested in the coal trade in Calcutta and consumers of coal in the neighbourhood of Calcutta, in the chief Indian ports and in Colombo, Penang and Singapore. The evidence given by representatives of the railways serving Calcutta, the Great Indian Peninsula Railway and the Port Commissioners, Calcutta, Bombay and Karachi who were examined with special reference to the handling and transport of coal will be found in Volume III.

The witnesses were examined by the President except where it is otherwise stated. Their evidence is printed as corrected by them. The names of those who desired all their evidence to be kept confidential have not been printed in the list of witnesses.

The evidence obtained from places in India other than those mentioned in the table of contents has been printed along with that obtained in Calcutta.



15. What are your views in regard to the present level of charges for the use of these facilities? If you consider that they are too high, can you furnish facts and figures in support of your views?

16. To what extent have increased charges for carrying coal from the depôts to steamers affected the price of bunker coal?

D. Steamer freights.

17. What are your views in regard to the present level of steamer freights? If you consider that they are too high, can you furnish any facts and figures in support of your opinion?

E. Comparative merits and prices of Indian and other coals.

18. Have you experience of coals other than Indian coal, and if so, what are your views as to their merits as compared with Indian coal?

19. If the pit head price of coal were eight rupees per ton, what, in your opinion, would be its present c.i.f. price at Madras, Colombo, Bombay, Karachi, Rangoon and Singapore, assuming that the coal is paid for on wagon weights?

20. Have you any definite information as to the prices at which competing coals are selling at these ports?

21. In what manner, in your opinion, can the competition of coal other than Indian with Indian coal at these ports best be met?

22. Do you consider that there are any new markets overseas in which it would be possible to introduce Indian coal? If so, what measures would you suggest to that end?

23. Are there any cases within your knowledge in which the competition of coal other than Indian with Indian coal either in Indian or in other markets has been facilitated by the grant of special concessions in regard to railway and steamer freights or in other ways? If so, can you furnish any facts and figures in regard to the extent and effect of these concessions?

F. Grading, inspection and certification of coal.

NOTE.—By grading is meant placing coal in various grades or classes, so as to include coals of approximately the same nature within the same grade.

24. Are you in favour of the grading of coal intended for (a) export, and (b) bunkering?

25. Can you indicate the different grades into which you consider that Indian coals should be classified, and specify the coals which should fall into such grades?

26. If you are in favour of grading, what steps would you suggest should be taken to bring it about as soon as possible?

27. If you are in favour of the adoption of a grading system, should grading be controlled by a Government official, or by a Grading Board? If by a Board, should it be a non-official Board or a Board with a Government official as Chairman?

28. (a) Are you in favour of a system of inspection and grant of certificates of grade?

(b) If so, what agency would you suggest for this purpose?

29. In the event of the trade failing voluntarily to establish a grading system, should Government take power by law to enforce it, and if so, what should be the extent of the powers that Government should take?

30. How should the cost of (a) grading and (b) inspection and certification be borne?

31. As an alternative to grading, would it be possible to export coal on a guarantee of quality and calorific value as determined by analysis?

G. Pooling of coal.

NOTE.—By pooling is meant the combination of two or more firms in the despatch of coal of the requisite grade from the collieries and its shipment from the port.

32. Do you consider the pooling of coal (a) for export and (b) for bunkering to be practicable? If so, how is this to be brought about? To what extent would it obviate delays either to ships or to wagons?

33. If you are in favour of the pooling of coal, would you still advocate it:

- (a) if a steady and adequate supply of wagons were available at the collieries for loading coal for export; and
- (b) if additional facilities were provided at the docks and coal depots?

34. Is a compulsory pooling system either practicable or desirable?

QUESTIONNAIRE REGARDING FREIGHTS.

1. It is complained that the present coal freights from Calcutta to Rangoon, Singapore, Colombo, Bombay, Madras and Karachi, are too high. Can you state—

- (a) what they are,
- (b) on what basis they are fixed, and
- (c) whether they are capable of reduction?

2. It has been pointed out that freights for coal from South Africa to Bombay, Colombo and Singapore, considered on a mileage basis, are much lower than are those from Calcutta to these three ports. Can you explain why this should be?

3. (a) Is the present level of freights a paying one, and (b) how do they compare in this respect with pre-war rates?

4. Would a general rise in freight levels throughout the world affect the level of coal freights from South Africa to Bombay, Colombo and Singapore?

5. Can you give similar information about freights from (a) Japan and (b) Australia to Singapore?

6. Are the rates of freight on coal from Calcutta to Rangoon, Bombay, Madras, Colombo and Singapore controlled by any Conference and are they subject to any private rebates?

7. It has been stated that the Union Shipping Company, being interested in Natal mines, deliberately keeps down the level of coal freights from South Africa so as to facilitate the competition of Natal coal in foreign ports. Can you throw any light on this?

GENERAL QUESTIONNAIRE.

A. Possibility of economies on the coal fields.

1. Do you consider that there is any scope for reduction in the cost of coal at the pit head? If so, how, in your opinion, could such reduction be brought about?

2. Please state the extent to which, in your opinion, recent increases in wages have affected the cost of production.

3. To what extent, if any, do you consider that the cost of production has been or will be affected by recent or proposed legislation?

4. Have you made any calculation what the saving in stacking charges per ton would be if coal were despatched as raised instead of first going into stock?

5. What is your estimate of the wastage that results from its being stacked?

B. Possibility of economies in transport to Calcutta.

6. (a) Have you any suggestions to make in regard to the improvement of the system under which wagons are distributed to, loaded at, and despatched from the collieries?

(b) To what extent, if any, do you consider that such improvements would reduce the cost of export and bunker coal?

7. Would you suggest any alteration in the type of wagons supplied for carrying export and bunker coal?

8. What are your views in regard to the present level of railway freights on coal from the coalfields to Kidderpore docks, Shalimar and Howrah? If you consider that they are too high, can you furnish any facts and figures in support of your opinion?

9. Has the work of the Coal Transportation Officer in any way facilitated the trade in export and bunker coal? In your opinion is it desirable, in the interests of that trade, that the appointment should be retained, and if so, should any modification be made in the present system?

C. Possibility of economies at the docks and coal depôts.

10. What are your views in regard to the present level of port charges at Kidderpore docks? If you consider that they are too high, can you furnish any facts and figures in support of your opinion?

11. Have you any suggestions to make in regard to the improvement of the system under which coal wagons arrive at, are unloaded at, and are despatched from the docks? To what extent, if any, do you consider that such improvements would reduce the cost of export and bunker coal?

12. Do you consider the facilities for loading and shipping coal at the docks to be adequate? What suggestions, if any, for their improvement can you put forward?

13. Do you consider that storage and stacking space should be provided at Kidderpore docks with a view to expediting the release of wagons by enabling firms to store coal there pending the arrival of the ship? If so, what should be the extent of the storage provided, and have you any views as to the charges that should be levied for it?

14. Do you consider that the facilities provided for bunker coal at Shalimar and Howrah are adequate? What suggestions, if any, can you put forward for their improvement?

PART I.

CALCUTTA WITNESSES.

**J. B. ARGYLE, Esq., of Messrs. Turner, Morrison's Lodna Colliery,
R. G. M. BATHGATE, Esq., of Messrs. Jardine, Skinner'
East Indian Coal Co. and T. C. MURRAY, Esq., o.
Messrs. Octavius Steel & Co.'s New Manbhum
Coal Co.**

ORAL EVIDENCE—10TH JANUARY 1925.

(Note.—Except where otherwise stated the evidence is given by Mr. Bathgate.)

General.—I have been 21 years in coal in India and before that 10 at Home.

Mr. Argyle.—I have been out in India in coal since 1908 except for three years spent in mining in the United States of America: before that I was 8 years at Home.

Mr. Murray.—I have been in coal since 1907 in India and before that 7 years at Home.

A. Possibility of economies on the coalfields.

1. Reduction in cost at pit-head.—The problem is to reduce our production cost to a point cheaper than that of South Africa. In South Africa labour is plentiful and cheap. The amount of coal mined per miner per mensem in the Witbank area in the Transvaal is 51 tons and the average wage paid is from £2 to £3 a month, or say Rs. 45. The average per day loading machine-cut coal would be 25 tubs of 24 cubic feet capacity in the Witbank area, as is shown in Volume 68, Part I of the Transactions of the Mining Institute.

In India on the other hand some miners will on no account fill more than two tubs per day when hand-cutting galleries. Where coal-cutting machinery is installed the miners will load anything up to four or five tubs per day. At the collieries under my control we pay up to nine annas per tub for hand-cut coal and for machine-cut coal five annas per tub. In the case of hand-cutting the figure represents the earnings of a man and his wife, cutting and loading. In the case of machine cutting a woman can do the loading work, averaging five tubs per day.

The women who load machine-cut coal earn higher wages than women loading hand-cut coal, but they do not necessarily prefer loading machine-cut coal. A case came to my notice during the last three weeks in which a woman loading hand-cut coal with her husband refused to load machine-cut coal because she said she saw no reason why she should work while he sat doing nothing and lived on her earnings.

Personally I consider that one of the biggest factors in the costs is wages and that, contrary to the opinion held in Calcutta, an attempt should be made to bring about a reduction. This could only be done by concerted action. I might here remark that in the Chief Inspector of Mines in India report of 1923 mention is made of a strike in Giridih as follows:—"In January 1923 the coal-cutters went on strike, but they returned unconditionally within a week. In some instances the rates of wages for coal getting were reduced, and this had the immediate effect of increasing output." Reduce wages and

a two-fold effect will immediately result, first by an actual saving in cost by the reduced rates and secondly by an increased output which will effect a reduction in total costs.

A miner can easily cut three tubs a day by hand, but he is usually content to do no more than two tubs.

Mr. Murray.—Machine-mining is a comparatively new thing in India and miners are very conservative. Machine-mining increases production and so reduces the total cost per ton of the mine, but per ton it is actually more expensive than hand-cut coal.

As regards cost of production we consider the figure will be about Rs. 4-8.

3. Effect of legislation.—The prohibition of female labour is certain to send up costs but how far it is impossible to say as we have no basis on which to ground an opinion.

(*To Mr. Banerjee.*)—There is a danger that male labour, being agricultural and so independent, would stay away from the mines, if female labour were prohibited.

4. Possible savings in stacking charges.—A very substantial reduction of pit-head costs can be made by the removal of the need of stocking. It is difficult to assess the full costing effect due to this cause but the following heads will indicate the principal channels of enhancement:—

- (1) losses by theft,
- (2) losses by disintegration: at a very conservative estimate, 10 per cent. of the large coal raised from the mine disintegrates to slack during stocking. Further the coal deteriorates considerably in stock by weathering and quality is depreciated,
- (3) additional loading expenses due to long leading,
- (4) additional labour required for handling tubs on top of long stocks,
- (5) loss in output due to delayed handling of tubs on the surface,
- (6) added recruiting charges for additional labour involved, also added housing, etc., charges,
- (7) ordinary loading charges, which would be unnecessary if mechanical screens could be installed and continuously used,
- (8) expensive costs of irregular rake-loading in difficult labour season when contractor has to recruit locally or/and bring miners out of the mine to load, both of which measures are expensive,
- (9) financial loss due to Capital locked up in stocks.

The raising contract rates and also the overhead charges are enhanced considerably by the above. I consider that at least 5 per cent. of the reported raisings of the Jharia Field is stolen from stocks and allowing for the needs of the labour taken from stocks at least 3 per cent. of this is a direct loss to the industry.

The full cost to the industry owing to stocking cannot be much less than Re. 1 per ton and much of this could be saved if some workable transport scheme could ensure means for the loading of coal as raised directly into wagons for despatch.

Mr. Argyle.—The proportion of the coal stacked depends on conditions of wagon supply, etc. The loss on stacking depends largely on the height of the stack, or whether a tramway is run over it and of course on the amount of theft.

(*To Mr. Bray.*)—The estimate of Re. 1 for loss on stacking includes loss due to interference with raisings. It will be understood, however that this latter loss must, by reason of the uncertainty of the variables controlling it, be very difficult to assess and one can easily conceive of circumstances where the estimate of Re. 1 would be quite considerably enhanced by reason of this

loss in output. Taking average conditions over the whole Jharia field I consider Re. 1 quite a fair estimate of the additional cost per ton which the industry has to bear as the result of stocking on the collieries.

As regards cost of extra labour put on to reduce loss in output from delay to tubs on the surface, I have known the cost amount to as much as two annas a ton in one case and there are also the recruiting charges, etc., additional to this (item 6 above). As regards the extra cost of irregular rake-loading I can quote a case in which the extra cost of loading twenty five wagons of slack at one colliery was Rs. 5 per wagon. Whether, even if railway facilities were so good as to suffice for clearing all stocks, we should be able to avoid stacking because there might be no orders for the coal, is a thing which I cannot say: you must ask the Calcutta houses, but if the proposal to be outlined later of earmarking the coal from certain areas were accepted for the export trade, the probability is that stacking could be avoided at the collieries within those areas.

(To Mr. Stuart Williams.)—Our raisings in our best months are half as much again as in our worst which may be verified by reference to the interesting chart on page 5 of the Chief Inspector of Mines report 1923. We cannot, under present condition, avoid a certain amount of stacking if we are to be in a position to send up constant supplies to our consumers. As a colliery-man I want to get rid of all stocks but whether it is practicable depends on the Managing Agents getting orders. With present practice we are always bound to have stocks on the collieries in February or thereabouts. We would prefer that our customers stacked the coal. Anyhow with good railway services we could reduce the amount of stacking enormously even with present arrangements.

Mr. Argyle.—As regards stacking at the colliery being cheaper than stacking at the docks we have no information, but, if it is so, our objection to stacking at the colliery is that it affects raisings. From the colliery point of view it is better to stack at Kidderpore, but I take it from Mr. Stuart Williams that from his point of view it may pay to stack at the collieries rather than on expensive ground at the Kidderpore docks.

(To Mr. Banerjee.)—Even if the coal were stacked at the colliery I think we could get the coal away in time to load a vessel after stations were opened. I have known as many as 133 wagons loaded in one day at Bararee.

B. Possibility of economies in transport to Calcutta.

6. Improvements in wagon-supply.—I think there are six collieries on the Jharia field with mechanical plant, namely Kilburn's Raniganj Coal Association, Tata's Jamadoba (3) and Kustore (2).

It is possible even without mechanical plant, to get properly screened coal with permanently barred screens, but that needs open wagons. In this connection I may mention that many years ago the East Indian Coal Company erected such a screen at a cost of from fifteen to twenty thousand rupees but three years ago I took it down and used the materials for pit-head construction because in all the years during which it had been up, owing to our not being able to get suitable wagons, we had only loaded about three thousand tons with it. In short, screening means mechanical plant and mechanical plant means open wagons.

We consider that a scheme of transport designed on the basis of the following conditions should be put into operation for collieries supplying coal for the Export Trade;

- (1) open wagons of an approved type only should be used,
- (2) these wagons should be reserved entirely for Dock Coal service,
- (3) special light engines for siding, shunting and marshalling should be provided,

- (4) additional sidings, etc., should be put in to facilitate wagon handling at collieries,
- (5) weighbridges controlled by the Railways should be installed at the colliery sidings,
- (6) non-stop runs as far as possible to Docks should be instituted to save time and to prevent theft *en route*, and
- (7) better siding facilities should be provided at the Docks to permit of rapid return of wagons.

As regards covered wagons, the Kustore plant which I erected in 1903 had a sliding shoot to load a covered wagon through the side door, but it needed three coolies inside the wagon to trim the coal and the damage which they did to it with their kodalies or pronged forks practically nullified the effect of the screening.

(To Mr. Whitworth.)—I regard open wagons as desirable for use with the screens rather than essential: we can load covered wagons with screens but it is too expensive in practice.

If a colliery goes to the expense of putting up a mechanical plant, I consider that it should have every preference as regards the supply of open wagons. I cannot see that this involves any special injustice to other consumers, for with ordinary loading it is just as convenient to load covered wagons as to load open wagons. The provision of mechanical-plant to load covered wagons is too complicated a business to be practicable.

As regards the necessity for extra wagons, if you have mechanical plant there should always be enough open-type wagons on the siding to keep the plant working to its full capacity. Therefore it is necessary to have siding accommodation to suit and flood-lighting might be utilized to enable work to continue at night. Other collieries may grumble if more wagons are allowed to collieries with mechanical plant but if mechanical screens with picking bolts are not installed we must continue to depend on the very inefficient and out-of-date method of removing shale by a shale picker in the wagon. Mechanical screens means a cleaner product and to encourage the erection of efficient plants is for the good of the whole industry.

(To Mr. Banerjee.)—It is certainly not correct to say that mechanical screening-plant will only enable you to size the coal and does not assist to eliminate shale, water-marked coal, etc. These can all be better picked out on the belt and under more efficient supervision. I cannot agree that screening by hand and picking from stacks is in any way better or in any way cheaper than by mechanical means. With mechanical screening-plant gravity can be utilized to run the tubs from the pit-head to the screens and mechanical creepers to return them. The pit-head labour is little. Cleaning coal of different shale-content is simply a matter of design: longer picking belts may be installed permitting of a larger number of picking coolies to be employed. Dust and rubble are taken out of the coal mechanically. A large labour force, as is now necessary for hand loading, is not required and most of the labour employed on the screens would be the coolies working on the shale picking belts.

B. Possibility of economies in transport to Calcutta.

It seems to us to be worth while considering comparative merits of coals when deciding upon the proper class of coal to meet the competition of South African coal. Our feeling is that if we are to get back our export trade there are certain seams which should be ear-marked as specially suitable for shipment. On the Jharia field these would be 14A, 15 and 17 seams—Standard to Bhulanbararee for 14A seam, Bhulgora to Bhulanbararee for 15 seam and Bhagaband to Jorapukur for 17 seam. Jorapukur, we feel, might not be able to spare anything as Tatas probably need all the coal. It should be an easy matter to get coal away from this end of the field through Pathardih, Bhaga, Jharia or Bhojudih along either the East Indian Railway or the Ben-

gal Nagpur Railway to the docks. Properly organised with light locomotives the area defined could give one million tons per annum for export. This end of the field contains better quality coal than elsewhere in Jharia and is thus particularly suitable for developing export trade.

(To Mr. Banerjee.)—The coal from this end is also particularly suitable for coking. We do not consider that the question whether coal from here can be spared in large quantities is a matter on which we as colliery-men can give an opinion. Other coals besides these are suitable for export but these are the ones which compare most favourably on analysis with Natal coals and I am only pointing out where the coal which is most suitable for meeting the Natal competition can be found.

6. Improvements in wagon-supply.

(The replies given in the following paragraphs are given by Mr. Murray except where otherwise stated.)

I have never been able to see why the design of covered wagons should not be altered so as to allow of their being uncovered for use with mechanical plant. What I have in mind is some sort of porthole on the top. It should be much easier to alter the design of the wagons than to devise a plant that could handle both types of wagons. The figures in the following statement may be of interest: they relate to a colliery under my control.

Total wagons loaded during December, 1924	615
Total coal despatched	10,613 tons
Wagons overloaded	15
Wagons underloaded	35

Note.—Coal despatched from colliery realized about Rs. 9 per ton whereas coal loaded at weighbridge sold for Rs. 3-4.

Wagons despatched "upwards" (weighbridge wagons)	2
Wagons despatched "downwards"	613
Number of open wagons supplied and loaded	393
Number of covered wagons supplied and loaded	222
Number of Companies owning above wagons	11
Number of different types of wagons	72
Total marked carrying capacity of above wagons	11,296 tons.
Total weight of coal allowed to be loaded	12,200 "
Actually loaded	10,613 "

I would observe that since all the wagons were being loaded downwards, only the open type was asked for from the East Indian Railway. I should draw particular attention to the fact that there were 72 different types of wagons owned by 11 different railway companies out of 615 altogether. "Weighbridge wagons" means those which were loaded with overloaded coal which had been thrown over at the weighbridge.

I should call the figures for overloaded and underloaded coal pretty good. In this case it did not pay to overload: it is better to pay extra cheap freight (i.e., unloading charge) rather than give the coal away at Rs. 3-4 per ton. The ideal would be to allow us to fill a wagon with as much coal as it can carry, as we certainly do not want to overload or underload.

The load line on wagons is no use at all, it is so often incorrect.

Mr. Bathgate.—(To Mr. Legge.)—We would rather do away with the load line altogether. As regards safety we agree that a solution is not easy. (To Mr. Banerjee.)—If flush loading is impossible on grounds of safety then there is no more to be said.

I do not think that it would be the best solution for the collieries to mark their own load line by using any formula. The colliery Manager himself could not possibly measure every wagon and in any case the specific gravity of

coal on the Jharia field does not vary very greatly. The railway companies should take the responsibility by providing suitable wagons and letting us load them full.

We agree with the Indian Mines Managers Association that the overloading and underloading charges are iniquitous. It is an interesting fact that the railway companies lose revenue by imposing overloading charges and penalties because we underload to be on the safe side. This means that they get less revenue than if we loaded more coal and paid the ordinary charges on it.

I cannot say that we have any grievance about demurrage. My view is that if I hold up wagons I should pay for them, if it is my fault and I have no reasonable excuse to put forward.

(*To Mr. Banerjee.*)—I grudge payment of demurrage when the Railways have given me a "restricted" wagon and charge demurrage on it at the weighbridge in addition to a transshipment charge but I have found that if I approach the local D. T. S. in such cases he may modify the claim.

I consider that it is a retrograde move to make Dhanbad subordinate to Asansol and am of opinion that both stations are of such great importance as to justify the appointment of senior and experienced officials at each.

Managers in Jharia wish to deal direct with senior officials in Dhanbad or when necessary leave their Managing Agents to deal with the head office of the Railway in Calcutta. It will suit neither Managers nor Managing Agents to have to transact business, relating to collieries in the Jharia field, through Asansol.

Mr. Bathgate.—(*To Mr. Banerjee.*)—Pilot Guards occasionally leave all the wagons in a siding if one or two of them have not finished loading. I always report such cases by telephone and confirm by letter and I need hardly say that we get fairly good relief. If we can prove our case, the Railways waive demurrage and the Guard at fault is reprimanded. I find that the Yard Masters at Pathardih and Kusunda and the D. T. S. at Dhanbad are very reasonable.

A remedy for many of the defects in the working of the wagon system would, in my opinion, be for senior railway officials to go more round colliery sidings and branches. I am all in favour of having monthly meetings of the responsible officials of the Railways and Collieries. When we had such meetings in the past they were productive of much good.

Mr. Bathgate.—It is not the case that they were dropped because nothing came up for discussion. When we had them, we could tell the local officials about every little grievance, which used then to be put right without difficulty; now-a-days we have to correspond interminably about them. As to the organisation of the meetings, in those days we had a very efficient technical committee of the Indian Mining Association composed of two men from Jharia and two from Raniganj to whom all such questions were referred. They called up other Managers selected by them and discussed the questions. It was this technical Committee with their co-opted members who met the Railway officials at the meetings. They discussed anything which came up and made notes of the decisions which the one party sent to the Indian Mining Association and the other to the Railway. The technical committee has recently been started again. Every Colliery Manager would welcome a revival of these meetings.

(*To Mr. Legge.*)—If meetings were held every month, the many little difficulties that crop up in actual working together with such matters as demurrage charges, overloading, etc., would all be the better for open discussion than with the present arrangement of exchanging letters. Such meetings would result in a better understanding and following therefrom fuller co-operation between the Collieries and the Railway.

I agree that we should have proper minutes communicated to both parties, direct to the Agents of the Railways and the heads of the Railway Coal Department.

Speaking in general terms I do not agree that it would be any improvement to have wagons distributed to sidings as soon as they are received instead of having them at Marshalling Yards. It might lead to chaos and it might end in wagons being misloaded in the sidings.

(From this point onwards the evidence is that of Mr. Bathgate except where otherwise stated.)

I have not heard of any objection as regards the number of weighbridges on the Jharia field. I have never known wagons being held up at the weighbridges for a month or anything of that sort. The Kusunda weighbridge with which I am most familiar and which is a very long bridge is extremely efficient. As regards having our own weighbridges at the collieries there are usually too many sidings at each colliery for it to be possible under present methods. Should however certain collieries be ear-marked to feed the Export Trade direct as proposed above central screening stations would probably be arranged at each colliery and the coal from the various openings conveyed there by aerial ropeways or other forms of haulage. The sidings would thus be centralized and one weighbridge per colliery or perhaps two would be sufficient.

As at present constituted the collieries necessarily have a siding for almost every opening and under such conditions a weighbridge to each siding would be very unnecessary and impracticable.

Mr. Argyle.—It depends on where we could put the weighbridge. We could save the cost by the saving in charges for overloading. In my own case however we could not without difficulty put a weighbridge anywhere except on the main line between Jharia and Pathardih, which would be impracticable. Colliery sidings have not in the past been laid out with this point in view.

I do not think that checking of weights at the collieries would offer any difficulty. The Colliery Babu is as honest in my opinion as the Railway Babu.

(To Mr. Stuart Williams.)—We may say that the question of the provision of weighbridges by the collieries has received in the past consideration. In fact we all expected that some years ago a patent steel yard invented by a Bengal Nagpur Railway Engineer would be introduced generally: it was very simple and it was not costly: the price in 1913 was, if I remember right, about Rs. 1,000.

(To Sir Rajendra Nath Mookerjee.)—There are so many different sidings that it would scarcely pay to have weighbridges put in on every siding on condition that the Railway would bear the cost and charge the collieries rent. If private weighbridges were practicable they would abolish all disputes.

Mr. Murray.—It might mean having a locomotive on each weighbridge and that would be more expensive than the cost of the weighbridge itself.

As regards a general policy of installing weighbridges at collieries there are a number of difficulties that would have to be faced. I know of few places where, from the economic standpoint, it could be done but it certainly would be possible at some of the larger Collieries.

The wagons do not come into sidings regularly and the guards do not enter the correct time in the book. At Jealgora we are allowed 10 hours loading period if wagons are supplied before 7 A.M., and 20 hours if after 7 A.M.

Mr. Argyle.—It is the same with all of ours.

Mr. Murray.—Mine, on the contrary, are on the twenty hours system.

Mr. Argyle.—Collieries raising over 8,000 tons monthly should be allowed 20 hours loading time, so that mechanical loaders may deal with coal raised during the night instead of it being dumped on the ground. The Railways do not stick to the ten-hour system but suit themselves. Properly speaking, the wagons should be drawn out between 4 P.M. and 6 P.M. and supplied at between 7 A.M. and 9 A.M. They are very occasionally supplied before 7 A.M. but mostly come in after 10 o'clock.

(To Mr. Banerjee.)—Certainly this is very inconvenient to us.

(To Mr. Stuart Williams.)—We cannot say off-hand what is the percentage of coal from our collieries despatched for shipment: we can let the committee have figures. We have no difficulty in working to a definite programme for shipment coal. We have definite instructions to despatch so many wagons each day to keep the loading of the steamer going on regularly and if we get wagons we comply. So far as the colliery is concerned there is no difficulty about wagons going down each day for the steamer so that it may load from wagons which arrive in the morning. It depends on the supply of wagons. I am certainly in favour of a system of working rakes between the colliery and the docks for export coal: the Association asked for this some years ago and it worked for some time.

(Mr. Stuart Williams.)—My experience is that the rake breaks up at the docks and does not go back again as such to the colliery.)

7. Types of wagons.—So long as the wagon is an open one no particular type is required from the colliery point of view for downwards loading. *(To Mr. Banerjee.)* The size does not matter so long as the stuff is got away. Arrangements at the docks may however necessitate certain conditions in the design of the open type.

Mr. Argyle.—All wagons out here are larger than they are in England.

8. Railway freight.—We have no remarks to offer on this. It is a question which concerns the Calcutta houses only.

9. Work of the Coal Transportation Officer.—We have nothing to say about him. *(To Mr. Banerjee.)*—We find no great difficulties in loading rakes. There is, of course, the possibility of disorganizing labour because the supply fluctuates. Sometimes we have a few wagons and then there is a sudden rush when it is difficult to get sufficient men together. We should certainly prefer a few wagons regularly every day to rakes or half rakes occasionally. To have regular despatches each day means better loading than to have rakes at intervals.

E. Comparative merits and prices of Indian and other coals.

In this connection it would be well to look at the methods of Natal which is the most serious competitor to India. Natal has considerable reserves of good coal, and its output has increased from 2½ million of tons in 1911 to 4½ million of tons in 1923. Of this latter total 2,609,000 tons were bunkered and exported from Durban and also the major portion of the 3,50,000 shipped at Cape Town is from Natal. Well over two thirds of Natal's output is shipped.

The average analyses of 16 samples of Natal coal (T.I.M.F. Volume LXVIII, Part I) give the following results:—

Moisture.	Ash.	Volatile Matter.	Fixed Carbon.	Sulphur.
Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1·27	12·22	18·97	68·09	1·40

The internal demand is limited and the Natal Collieries have to look to shipping mainly for their markets. The collieries are all new and are greatly advantaged by up-to-date appliances. The early recognition of the

necessity for a shipping-outlet has resulted in scientific marketing methods being adopted and a very considerable amount of responsible coal-testing is done by the Government Coal Grading Committee, handling big samples. Ash analysis and fusibility of ash determinations are made by the Grading Committee all with a view of classification, on a scientific basis, of the coals for the market needs. Coal-washing too is in general practice in Natal. To sum up, the coal industry in Natal is a young and live industry with cheap and good coal, with a lively knowledge of the needs of its markets and with substantial financial assistance in the shape of a rebate of six shillings and seven pence per ton on railway freight. As compared with Natal coal our best coal is somewhat lower in fixed carbon and higher in volatiles and I consider our best coal as mined in the areas already defined is easily the equal of theirs.

We should however adopt the same marketing methods as South Africa, and further produce our coal in better condition for export than is now done. We consider that only when the use of mechanical screens are made possible by improved transport condition can this be effected.

F. Grading, inspection and certification.

We do not wish to make any remarks about this section except to suggest that the Grading Board would be incomplete without at least two Mining Engineers from the coalfields as members.

A. J. BARNARD, Esq., Manager, Planters Stores and Agency Co., Ltd., Calcutta.

WRITTEN STATEMENT.

8. **Railway freight.**—If the trade is to be stimulated railway freights on coal both for shipment and home consumption must be reduced and one important reason for justifying this is that the Railway Companies are now obtaining their coal supplies at a considerably lower price than the past three years which means a very considerable reduction in their running expenses.

24. **Grading of coal.**—If this method is to be adopted we would suggest that there should be no discrimination between Jharia and Raniganj coals, but the system of grading should be on a common basis, according to the character of the coals; which would abolish the present anomaly prevalent among coal consumers that Dishergarh coals are superior to Jharia for every purpose.

BENGAL NATIONAL CHAMBER OF COMMERCE.

WRITTEN STATEMENT.

A. Possibility of economies on the coalfields.

1. **Reduction in cost at pit-head.**—The Chamber recognises that there has been an advance in prices of coal since the year 1913 and some reduction in the price may be and ought to be brought about.

2. **Effect of recent increases in wages.**—Wages have increased by 50 per cent.

3. **Effect of legislation.**—Some recent as well as some of the proposed legislations are as much affecting the cost of production in the coal industry as in the other industries. The Chamber is not sure how the raising cost

in the coal industry has been affected by these legislations but enquiries go to show that the increase is in the neighbourhood of 4 annas per ton.

4. **Possible savings in stacking charges.**—There will be a saving of about 2 annas per ton.

B. Possibility of economies in transport to Calcutta.

6. (a) **Improvements in wagon supply.**—Since the appointment of the Coal Committee in 1916, the system of wagon distribution for coal traffic has been based on the recognition of the claim of certain industries to prior supply of wagon. Such a system has operated to prejudice the cost of those industrial consumers who have been unable to command sanctions for wagon supply of a superior class.

7. **Type of wagons.**—Open and not covered wagon should be used.

8. **Railway freight.**—The Committee believe that the present reduced coal freights from the coalfields to the docks would still bear further reduction. They are informed that the Tata Iron and Steel Company enjoy a specially low rate of freight for conveyance of materials and finished products from their workshops to the docks.

C. Possibility of economies at the docks.

10. **Port charges.**—The dock charges are not very high but the coal trade which is hard hit by competition from abroad certainly deserves a further reduction of charges if possible.

11. **Improvements in handling wagons and results on costs.**—Arrangements should be made to unload wagons within a short time. The monopoly of labour contract by one Company should be done away with and healthy competition should be established.

12. **Loading and shipping facilities.**—These are not adequate. We would suggest arrangements being made to lift loaded wagons and unload them by electric power.

13. **Storage and stacking at docks.**—We consider that storage space should be provided at the docks. Till space is provided adequate arrangement should be made for dumping accommodation. Reasonable charge should be levied for storage accommodation.

14. **Facilities at bunker coal depôts.**—For bunker additional accommodation should be provided in Kidderpore.

16. **Effect of carrying charges on bunkering costs.**—The cost of bunker coal has gone up to the extent of Re. 1-4 per ton owing to the recent increase of labour charges. This works out at approximately 100 per cent. on the pre-war level. The following table will indicate the rise under various items:—

Items.	Pre-war.	Present.
	As.	As.
Unloading wagons	2	5
Carrying to jetty	5	8 to 10
Boating	5 to 6	8
Trimming (including unloading the boat)	7	14
	Rs. 1-3 to 1-4	Rs. 2-3 to 2-7

D. Steamer freights.

17. **Steamer freights.**—Though the steamer freights have not advanced on the pre-war scale more than the cost of other kinds of transports, yet they should be lowered having regard to the low rates which the British and the South African coal pay for transport of coal to the eastern ports.

E. Comparative merits and prices of Indian and other coals.

19. C.i.f. prices of Indian coal at different ports.—If the pit-head price is assumed at Rs. 8 per ton, the f.o.b. price is worked out by the addition of the following items:—

	Rs.	A.	P.
Price of coal	8	0	0
Freight	3	8	6
Finance	0	4	0
Insurance	0	3	0
Port charges including supervision	1	1	0
Agency charges at destination end	0	4	0
TOTAL	13	4	6

The c.i.f. price on this basis to different ports will work out (exclusive of allowance for loss in weight) as shown in the following table:—

	Price f.o.b.	Steamer freight.	Price c.i.f.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Singapore	13 4 6	6 8 0	19 12 6
Rangoon	13 4 6	5 0 0	18 4 6
Colombo	13 4 6	6 0 0	19 4 6
Madras	13 4 6	5 0 0	18 4 6
Bombay	13 4 6	8 0 0	21 4 6
Karachi	13 4 6	8 0 0	21 4 6

20. Prices.—The following quotations have recently been reported:—

Bombay. Natal coal 28s. c.i.f.=Rs. 18-13-0
at 1s. 6d. rate of exchange.

Karachi. Natal coal Rs. 19 c.i.f.
British coal Rs. 21 c.i.f.

21. How competition can be met.—The best way to meet competition with foreign coal in the non-Indian ports would be by having reduced the cost of transport, both rail and steamer.

23. Special assistance to other coals competing with Indian.—It is well known that South African coal receives a bounty of 7s. 9d. per ton of 2,000 pounds in the shape of rebate in railway freight.

F. Grading, inspection and certification of coal.

24—31. The Committee of the Chamber strongly favour a grading system. The adoption of such a system, it is hoped, will tend to inspire confidence in Indian coal in the non-Indian ports. But it is recognised that despite a grading system it will be necessary for the coal trade to reduce, if possible, the present raising cost in order to regain a footing in their lost

markets. As representing the interest of the internal consumers also, the Committee of the Chamber would favour a grading system. Some arrangement should be made for the supervision of grading, the trade paying for it.

J. N. GHOSE, Esq., representing the Bengal National Chamber of Commerce.

(Oral evidence—dated 28th January 1925.)

There are about 300 firms which are members of our Chamber, representing mills, banks, shipping, insurance, factories and coal. The coal-firms number 15 or 20. My own firm has two collieries on the Jharia field but do not now export any coal. Some of our members do export business, in particular Mr. N. C. Sirkar.

A. Possibility of economies on the coalfields.

1. Reduction in cost at pit-head.—We consider that some reduction in the price might be brought about if there were wagons enough to allow us to reduce stacking and all such things. Also if the railway provide sidings, carting can be reduced.

(To Mr. Legge.)—Certainly these economies will depend on the railways and otherwise I cannot suggest any reduction. We colliery firms have tried to reduce our costs but cannot. Labour would be disorganised.

B. Possibility of economies in transport to Calcutta.

6. (a) Improvements in wagon-supply.—*(To Mr. Banerjee.)*—I am not only a colliery owner but a coal consumer having got a factory at Calcutta, comprising an iron foundry and machine-works. As a factory owner I have experienced difficulties about wagons. I am not a big consumer so my sanctions are always E or D class. In consequence I have to pay a higher rate for coal and wait for my supply. A big consumer in the A class who can command higher sanctions can demand lower rates from the collieries who want to get their stocks away, whenever wagons are scarce.

8. Railway freight.—*(To Mr. Legge.)*—We think that the present reduced coal freights to the docks would bear further reductions because the pre-war rate was only Rs. 3-2 less 9 annas rebate to Kidderpore. I agree that the pre-war costs of the collieries have increased; but whether the same remark applies to the railways I cannot say, for we do not know what profit they are making on coal transport. We have often tried to go into this matter and have on several occasions asked them to state their cost per mile for carrying coal.

It may be correct that in return for the especially low freight on iron and steel the railways get traffic in both directions but conditions are different for coal.

(To Mr. Banerjee.)—As regards seasonal freights on coal my Chamber has discussed this point but has not mentioned it in their written reply. Personally I am in favour of seasonal freight. I may mention that there has been correspondence on this point in which my Chamber supported the idea.

(To Mr. Banerjee.)—My Chamber are not in favour of the retention of the Coal Transportation Officer. They have often declared in favour of preference to Loco. coal with everything else being treated on the same level. I should like a preferential supply of wagons for coal going to Indian ports if there were a system of cumulative supply. We have not many members who are interested in the coal trade and our other members like preferential treatment for industries. Speaking personally, as a factory owner and industrialist, I should have no cause for complaint if all industries were put on the same level.

(*To Mr. Legge.*)—My colliery was flooded and my raising was stopped last year. Quarries on the coalfields are sometimes flooded. My colliery was worked on the incline system.

(*To Mr. Banerjee.*)—The quarries which drive galleries keep their works intact from water but those which do not get flooded. I should not say that this is because pumping arrangements are defective but some collieries are not worked scientifically.

C. Possibility of economies at the docks.

11. Improvements in handling wagons and results on costs.—The Port Commissioners must have a regular supply of labour but our point is that when they renew their contracts they do not advertise so that others might tender for the work. If they did advertise the competition would bring down the rates. In my opinion they ought to advertise rather than take over the work themselves.

(*To Mr. Legge.*)—We did not suggest having more than one contractor at one time but it would be quite possible to have more than one contractor and more than one labour-force working simultaneously without any trouble.

(*To Mr. Banerjee.*)—I think that the contract-system would be better than a departmental-labour system.

13. Storage and stacking at docks.—We think that there should be storage before the stations are opened, even when a steamer is not coming, when there is a chance of a steamer coming.

14. Facilities at bunker coal depôts.—We advocate additional accommodation for bunker coal at Kidderpore for the convenience of the steamers which are in the docks. There is no special bunkering depôt now in Kidderpore and there should be one or two such depôts there.

(*To Mr. Banerjee.*)—We do not supply the same class of coal always for bunkering as we do for cargoes and so we require additional space at the docks where special stocks of coal may be kept for bunkering. Bunkering at the docks now is practically confined to steamers loading export-coal and no coal is kept there from which other steamers might count on being able to bunker.

I have a coal depôt at Howrah and I certainly do experience difficulty in getting the hopper wagons for the shoot. I do not get my fair share of the hoppers. We have to wait and that means that when our turn comes there is no water to allow of barges coming alongside and the jetties are jammed. I do not agree that there is water alongside the jetties every day for four or six hours. We do not get sufficient water at the neap tides. As to dredging we apply every year to the railways for it to be done but we do not get any satisfaction.

16. Effect of carrying charges on bunkering costs.—(*To Mr. Legge.*)—Besides the increase in the cost of labour there is an increase in the rent paid to the railway company and the Port Commissioners. The increase in labour costs merely reflects the general rise in the cost of labour everywhere.

D. Steamer freights.

17. Steamer freights.—We think that one way to lower steamer freights is for the Agents of the steamer companies to arrange that when a steamer takes a charter to a foreign port it should be back-loaded.

(*To Mr. Whitworth.*)—I admit that the increase from the pre-war figure of Rs. 4-8 to the present figure of Rs. 5 for freight to Rangoon is not a great advance. We do not grudge this eight annas but there is room for reduction on freights generally.

(*To Mr. Whitworth.*)—The Chamber got their figures for steamer freights from Capital and from Mr. N. C. Sirkar. He is a shipper of coal and as

Chairman of the Coal Combine he knows what the freights are. He is ill or he would have come to-day to give evidence on behalf of the Chamber.

E. Comparative Merits and Prices of Indian and other Coals.

(To Mr. Whitworth.)—We have coal in Bengal equal in quality to the Natal coal quoted at Bombay at Rs. 18-13-0. Our figure of Rs. 3-6-8 for railway freight in our reply to question 19 assumes that all the coal is coming from Jharia and if half of it came from Raniganj there would be an eight annas reduction.

The reason why even with the reduction suggested I do not think that Bengal coal would get into Bombay is that we have lost the market and it is not easy to get it back: also in our reply to question 19 we have given a very modest figure for our c.i.f. price.

I do not admit that the figure of Rs. 8 pit-head price taken in the question 19 is too much: it allows for us some profit which otherwise we should not get at all. Speaking for my own collieries my cost is Rs. 5 but that does not mean that on Rs. 8 I should be getting Rs. 3 profit: you must take depreciation into account and last year my colliery was flooded and out of work for 3 months.

21. **How competition can be met.**—(To Mr. Legge.)—Our reply suggests no other way of meeting competition than at the expense of the railway and steamer companies but the collieries should do something in this respect.

(To Mr. Banerjee.)—Our idea of the extent of the reduction would be a return to pre-war rates. If our costs go down we shall similarly charge only pre-war prices for our coal.

Personally I should favour a bounty as a means of meeting external competition but on our committee there are only two or three coal-men and when the bounty is not mentioned in the written reply I cannot put it forward as the opinion of the committee.

F. Grading, inspection and certification of coal.

24—31. Our committee has not gone into any details in connection with the suggested grading system.

(To Mr. Banerjee.)—I am personally in favour of a non-official Chairman for the Grading Board, not an official: I always favour non-official Chairmen in Municipal and other matters also.

R. V. BRIGGS, Esq., of Messrs. R. V. BRIGGS & Co., Analytical Chemists, Calcutta.

WRITTEN STATEMENT.

B. Possibility of economies in transport to Calcutta.

9. **Work of Coal Transportation Officer.**—I consider this appointment should be retained from my experience during the shipments of coal to Bombay by the Calcutta Coal Combine. By controlling in this way, a more even distribution of wagons can be made and very urgent work facilitated, *i.e.*, less martialling in the yards of the colliery districts, quick despatch, quick movement of wagons and quick returns and surety of allotment.

C. Possibility of economies at the docks and coal depôts.

12. **Loading and shipping facilities.**—These are not adequate. A mechanical loader of some description would be both better and quicker and at the same

time the coal would be broken less and help in keeping down the percentage of dust and slack.

13. Storage and stacking at docks.—I consider storage and stacking space should be provided for from $\frac{1}{2}$ to $\frac{1}{3}$ of the amount to be shipped. This would save demurrage on steamers, allow of better inspection and quicker loading.

E. Comparative merits and prices of Indian and other coals.

18. Comparative merits.—In my opinion true first class Indian coal is as good as the average quality of imported coal, *i.e.*,—

True 1st class Jharia=1st South African,

True 1st class Raneegeunge or Dishergarh=Australian or Japanese coal.

21. How competition can be met.—By paying more attention to quality and also despatching the quality tendered for and not inferior.

F. Grading, inspection and certification of coal.

24. Grading of coal.—I am in favour of the grading of coal for both export and bunkering.

25. Classification into grades.—I would grade them 1st, 2nd and 3rd grades and in two classes Jharia and Raneegeunge. The classification for grading should be based on analysis only.

A. Jharia or Barakar Series and Giridih.

1.	2.	3.
Under 15 per cent. Ash and Calories 7000 and above.	From 15 to 18 per cent. Ash and Calories over 6000.	Ash above 18 per cent. and Calories below 6000.

B. Raneegeunge.

1.	2.	3.
Under 14 per cent. Ash and Calories over 6000.	Under 16 per cent. Ash, Calories over 6400, and under 6 per cent. Moisture.	Over 16 per cent. Ash, Calories below 6400, and over 6 per cent. Moisture.

26. Measures to effect grading.—Appoint a grading board (commercial men), by legislation, with their own staff of Mining Engineer and Analyst.

27. Control of grading.—Control should be by a Grading Board and Non-official.

28. (a) Inspection and certification.—I am in favour of a system of inspection and grant of certificates of grade, and of quality by analysis.

(b) The agency that I should suggest would be an Inspector, who should be a mining engineer, and Analyst, with power of rejection at point of exporting so that the contents of each wagon could be inspected and sampled if necessary for analysis.

29. Compulsory versus voluntary grading.—I do not think that Government should take power to enforce grading. If the colliery proprietors refused to help themselves I would not force them to do so but would let them work out their own salvation.

30. Meeting of cost of grading and inspection.—The cost should be borne by a charge of so much per ton on coal examined.

31. Sale on analysis.—This would be possible but not desirable as I consider grading is the prime essential.

G. Pooling of coal.

32. Practicability of pooling and its effects.—I consider the pooling of coal for export and for bunkering to be practicable, through a Combine or Colliery Proprietors' Association formed by both the Mining Association and Mining Federation. More Collieries to call upon and wagons distributed over an area and in this way facilitate loading and despatch.

33. Effects of improved facilities on pooling.—I favour pooling even if the wagon supply and facilities at docks and depots were improved.

34. Compulsory versus voluntary pooling.—May be practical but not desirable.

(Oral examination—January 2nd, 1925.)

General.—My experience as an analyst in Calcutta dates back to 1909 but before that I was working in England for six and in Bihar for nine years. I deal with several hundred samples of coal each year, being consulted by almost everybody in Calcutta or outside who is interested in coal. For example, whenever railways call for tenders I am pretty sure to get about a dozen samples of coal for analysis within a day or two.

B. Possibility of economies in transport to Calcutta.

9. Work of Coal Transportation Officer.—(To Mr. Whitworth.)—I do not know how arrangements were made by the Coal Transportation Officer for the wagons of the Calcutta Coal Combine. All I know is that applications were made and the wagons came down to the docks. If those wagons were given a preference over others then I suppose there would be no special difficulties which required the services of a separate officer for the purpose of making the arrangements. It seems to me that the alternative to the Coal Transportation Officer is to go back to the system which was in force in the old days when preference was given by the Station Master.

(To Mr. Banerjee.)—The reason why I know about the Coal Transportation Officer is that I was Analyst to the Coal Combine and was on the Committee. I know nothing about the details of his work. Advice notes were sent to me from the collieries giving the time of despatch, so that I could go down and get the wagon loads sampled on arrival. I do not know how many days it took in pre-control times for a wagon to come down from the colliery to the docks.

C. Possibility of economies at the docks and coal depôts.

12 and 13. Loading and shipping facilities; and storage at docks.—When I recommend mechanical loading in my reply to Question 12 and stacking of two-thirds of the amount to be shipped at the docks in my reply to Question 13, I really intend the second reply to apply to conditions as they are before mechanical loading is introduced. I should not insist that altogether mechanical handling of coal is necessary. What we want to abolish is the thirty foot drop into the hold which could be avoided by the use of mechanical methods even if the coal were taken up from stacks. But I agree that it would be far better to aim at loading the coal direct from wagons. The ideal would be to have tipplers as they have now at the Cossipore plant but that would mean having wagons of all one class, *i.e.*, open wagons.

E. Comparative merits of Indian and other coals.

18. Comparative merits.—The opinion which I have given in my written statement is based on the analyses which have made myself. I have not done any analyses of foreign coals to my certain knowledge but I have a suspicion that several samples of coal which I analysed were really samples of imported coals.

First class Jharia coal is in my opinion better than first class Raniganj or Dishergarh coal, for certain purpose I should say. It depends on the boiler in which it is being used. For example, shortflamed coal is better for the ordinary locomotive and Dishergarh would not for this purpose be so good, although it would obtain more favourable reports from the fire-men because it is so easy to use. Australian and Japanese coal which are long-flamed coals and have a high moisture content are like first class Raniganj or Dishergarh coal; that is the reason why I should classify them all together.

(*To Mr. Banerjee.*)—I am unable to answer the question how Dishergarh coal compares with South African coal since they are two entirely different kinds of coal and not comparable. There may be South African coals of the same class but I have never seen them. I may say that when I compare Indian and South African coal I am going on the results of work done by my partner in Bombay, where he made analyses of shipments of South African coal.

By first class South African coal I mean first class Natal coal. (*To Mr. Bray.*)—I have no knowledge of Witbank coal but I have heard badly of it.

I have seen South African coal myself in Ceylon. There were stacks of it ready for bunkering. If that coal had been sent down from the Bengal coalfields for the Calcutta Coal Combine I should have rejected it; it contained slack and dust running to 20 or 25 per cent. My opinion is based on inspection only. This was in February last year.

(*To Mr. Legge.*)—First class Jharia and South African coal are both short-flamed. Dishergarh coal would give poor results not only in a locomotive but in any forced draught boiler which was not specially designed to burn that class of coal; it would be suitable for some boilers.

F. Grading, inspection and certification of coal.

25. **Classification into grades.**—I should not subdivide Raniganj coal into Dishergarh and Raniganj. They are coals of the same series. From analyses done by me of supposed representative samples, the other coals which I have classified in my confidential evidence under the head of "first-class Raniganj" are, I consider, properly classified along with Dishergarh.

I should be inclined to put the collieries themselves into grades, with reference also to seams in the case of collieries which work two or three seams. It is in connection with such collieries that difficulties arise as to analysis and grading: contract will show coal from such and such a colliery and then the supply is given from the inferior seams instead of from the seam intended by the contract. The suggestions which I make in my confidential reply are based on results of coal analysed by me and since the figures belong to my clients I do not feel justified in publishing results based on them. My suggestions are not supposed in any way to be exhaustive.

(*To Mr. Banerjee.*)—It may be a fact that I have put in the same grade two coals of which one is usually supposed to be markedly inferior but my classification is based on the results obtained from samples which were sent to me. These may not represent the actual seams. Further, an analysis of a sample of coal would not show whether there was much shale in the seam.

26 and 29. **"Measures to effect grading" and "Compulsory grading."**—I agree that legislation to effect grading would in a way involve compulsory grading. But what I meant was not to force everybody into grading. If people wished to go in for it they should be made to carry it out on the lines laid down by legislation; if they did not wish to go in for it, then they should not be allowed to sell coal as being first, second or third class coal but only on the name of the colliery and seam.

I have not worked out any ideas for the constitution of a non-official Board but there is a basis for it in the existing Mining Association and Mining Federation. I do not favour a Board with the Chief Mining Engineer as Chairman. My view is that grading is a commercial proposition and that

it should be left entirely to commercial men. I should say that although such a Board would not have on it any expert capable of grading coal on his own account they would be able to manage the grading of coal if they had their own Mining Engineer and their own Analyst to advise them.

(*To Mr. Whitworth.*)—As regards grading I have not considered how large a staff would be needed to deal with all export coal. I agree that to grade 900 collieries several of which have several seams might be a matter of 12 months' work for a special staff of four or five men; that would be to start the work and until it was finished nothing much could be done. Also I agree that three or four men would be needed permanently to watch the coal which was despatched against export orders, that is, if inspection did not take place at the docks.

(*To Mr. Bray.*)—Everything depends on the sampling. The sampling of the coal in the collieries might take 12 months; but actual analysis would not take long.

28. Inspection and certification.—(*To Mr. Whitworth.*)—I have no personal knowledge of the coalfields in detail though I have visited them for the purpose of sampling occasionally, for example when I sampled Mucheridih.

Personally I would prefer to check the coal at the docks. I see no difficulty in carrying out rejection there. It would not be long before one came to know the appearance of the coal coming from particular seams; I agree that this is not always a possible guide and that it would be useful for this reason to have a man at the colliery end, but I am doubtful of its necessity. I worked the actual sampling of coal for the Calcutta Combine at the docks and the results turned out to be fairly satisfactory. If it was a question of a consignment of coal from a colliery working a seam of which the top section fifteen feet thick gave 16 per cent. and the bottom section fourteen feet thick gave 24 per cent. of ash, my analysis would not be an analysis of either the top section or the bottom section only. The chances would be against my taking samples out of only one part of the seam. Even if the two different sections of the seams were mixed in the one consignment, we should only have the same problem as we do to some extent with all coals which we have to analyse, even Dishergarh. For example, in a recent sample of Dishergarh I found 8 per cent. only of ash, though I had my suspicions that it was a picked sample.

I should say that it would be best to take a section for analysis at the colliery in the first place but I prefer sampling at the point of shipment for actual export. I have had considerable experience of other minerals and I find that when I sample at the docks the results which they obtained at home confirmed the results which I get here; if I sample at the godown the results at home discrepancies. I may quote an instance of lead ash where there was a difference of 50 per cent. between the results obtained by sampling at the godowns and those obtained by sampling at the docks; the godown results were in favour of the seller; in this case I took samples from 25 per cent. of the total number of bags at random after up-setting the whole pile.

(*To Mr. Legge.*)—I admit that if coal is rejected at the docks it will involve a waste of wagons and transportation power over 175 miles. But if you do not test at the docks it would mean that bad coal would be shipped. I can quote the case of a shipment of 200 tons of coal of which 40 tons were shale; I rejected the whole quantity at the docks. (*To Mr. Bray.*)—This would hardly happen with a coal that was included in the grading list unless it was a banded coal. In the case quoted by me I think the mixture of shale was deliberately done in the hope of getting it through: it may have been due merely to carelessness at the colliery. The rejection at the docks was from inspection and not on the result of analysis. If they were loading direct from wagons there would be no time to get analysis finished before shipment was made; but if two-thirds of the coal were stacked at the docks it would be possible to get the analysis-results before the coal was shipped. What is wanted is the ash analysis which is a quick matter. Once the samples are

known after grading by the Board, all that would be really required would be the ash analysis.

(*To Mr. Whitworth.*)—In America sale is frequently on analysis with seams varying as they vary on the Jharia field. I cannot say whether it would be easy to do this in India. I can quote two cases in which it has been done here, both of them, I think, from the lower field. I do not see why once the analyses have been done and the collieries have been graded we should not use analysis as the basis for sale. There is a Water Board up-country which is buying on analysis and I get the samples sent me to be analysed. I cannot say that they pay on check analysis but I know that they can reject consignments on the results of the analysis made. They have the high figure of 7,200 calories in the contract.

(*To Mr. Banerjee.*)—The way I sample wagons at the docks is to take baskets as they are unloaded or to take samples from different parts of the wagons. How much I take for sampling depends on the size of the shipment. For manganese I should take a total of two or three tons probably, if the shipment was between 2,000 and 3,000 tons. I only make one analysis for manganese because manganese runs very much more evenly than coal.

It may make things clear if I explain the procedure which we followed in dealing with the shipments made by the S.S. "Katherine Park" for the Calcutta Coal Combine. We sampled every wagon that came in, taking over a maund from each. These samples were set aside according to collieries and when the whole consignment for each colliery had come down we crushed and quartered the samples from each colliery and gradually got them down to a residue of 10 or 15 seers. This was taken to my office where it was finally powdered down and analysed.

This process took some time; I used to go down to the docks on many days at 7 o'clock and stayed there sometimes till 10. (*To Mr. Stuart Williams.*)—I cannot give the average number of wagons which I sampled per day. It would not amount to 70 or 80. (*To Mr. Bell.*)—It takes a long time to get the sample finally powdered down but not hours. (*To Mr. Stuart Williams.*)—Whether sampling could be done in this way for all the coal exported from Calcutta depends on the staff which you are prepared to provide; I agree that with the full number of wagons coming down to the coal berths you might have to take 800 separate samples per day but on the other hand you might have 40 wagons which eventually ended by being represented by one pile and by one sample. You might say that the average quantity coming down for the Combine was 20 wagons per day and that we took from one to two and a half maunds from each wagon; this meant taking 10 or 15 lbs. to the office; the rest of the coal was thrown back on the heap.

(*To Mr. Banerjee.*)—I do not think that sampling in this way would give misleading results. I should not think that, when wagons containing different kinds of coal were brought down to the docks from different collieries, the results would be that the coal remained unmixed and that you got a different kind of coal in each different hatch. I agree that if this did happen the buyer at destination might sell to customers parcels of coal which were either very much better or very much worse than the average. It has not worked out like that with manganese, for which, as I have said, the home results agreed very closely with those which I have got here; I refer to consignments which were purchased by one firm at the other end. When sampling coal from shipment they usually stop every so many baskets. I do not think that the result would be far out if one worked on the method which I have described: but the mixing of coal is a practical question which can be considered separately from that of analysis. The point raised by Mr. Banerjee is certainly a difficulty in regard to sampling at the docks but there are difficulties also about sampling at the collieries.

(*To Mr. Bell.*)—When you are dealing with coal brought down to the Kidderpore docks there is every chance that the wagons containing different kinds of coal have been mixed on the way down while crossing the river, etc. Besides once they come into the docks the wagons get mixed up: you can

see for yourself that the wagons from one colliery come into the wharf not in a batch but mixed up with those of other collieries. This was one of the difficulties which I found in sampling the consignments of the individual collieries for the Combine.

30. Meeting of cost of grading and inspection.—I cannot say that I have considered what would be the cost of working a grading system on the lines proposed by me. I do not suppose that it would be excessive. As regards pay of the staff I can only say that in my own business, I am remunerated by so much per ton. I do not confine my work to analysing coal only but I quote this method of remuneration as a basis for a possible scheme. *(To Mr. Bray.)*—The rate at which I was remunerated for doing the sampling and analysing for the Calcutta Coal Combine was 9 pies per ton. The amount of work that I did for the Combine was not a large part of my business. To keep a Mining Engineer and an Analyst the Board would have to pay more than that. But as regards the provision of a laboratory it would depend on whether they gave the work out to a commercial firm or appointed their own staff. Although I may seem to be speaking in my own interests I should say that they would do better to entrust the work to an outside man instead of keeping a whole time analyst. If their analyst is merely the Analyst to the Board and nothing else he would be regarded as a servant of the Board and his opinion would have less weight with the buyer; if he was an outside man people would consider him not to be influenced in his views one way or the other. This is the way in which my firm is regarded now: we get a lot of work sent to us from companies which keep their own analysis: in fact we are treated as if we were referees.

(To Mr. Bray.)—Inspection and sampling could be done at the collieries but, to do such work thoroughly, you would have to have a large staff of very reliable men and you would certainly have to pay highly. *(To Mr. Whitworth.)* I agree that you would have to give high pay, housing and offices to the men working on the coal fields, if you have them there, and you would have to provide an office building and housing accommodation at the docks, and that this would be apart from the direct cost of analysis.

31. Sale on analysis.—I am not in favour of sale on analysis but I am in favour of grading on analysis and of check by analysis. Both in England and in America contracts are made on an analysis-basis and I myself was for sometime doing work for a concern outside Calcutta that was buying coal on a plus or minus basis on analysis results: only once during six years was the supply company fined. This indicates that the loading at the colliery was done under careful supervision.

(To Mr. Bunerjee.)—It is a fact that you can get different analyses of the same sample of powdered coal at two different laboratories, but it is not always so. I analysed a powdered sample of coal here of which a part was sent home to the Fuel Research Board and my results came out within one and a half per cent. of theirs. On the other hand, when I was at College six of us analysed a single powdered sample and no two of us got the same results, using a Lewis Thompson calorimeter: but our duplicate results agreed, the personal factor in the use of this calorimeter being large. It all depends on how you do the analysis.

You must remember that a professional analyst has his living to earn and is careful to do nothing which will injure his reputation. For myself, before I let any result go out I assure myself that they are as correct as it is possible to make them. The personal factor comes in when dealing with the calorimeter, but personally I do not use a calorimeter. When we are analysing for ash I have independent duplicate analyses made in my office and if they do not agree I do not let the results go out. I wait till I get results agreeing to the second decimal place.

(To Mr. Stuart Williams.)—They sell on analysis in the United Kingdom and in the United States of America but I cannot say that they sell only on this basis. As regards the United Kingdom and in particular South Wales I cannot speak with assurance but I am certain that they rely on analysis.

in the United States to a great extent; in the United Kingdom they do not always merely trust to the reputation of the colliery supplying the coal.

(To Mr. Stuart Williams.)—I agree that sampling for analysis would not be easy if you had mechanical shipment and that it is facilitated by dumping. I do not know of any mechanical plant that deals with ground coal. If there is through inspection at the collieries there is no need for grounding at the docks, but if it is grounded there there will be better inspection.

(To Mr. Stuart Williams.)—Although I recommend that stacking should be allowed for between one-half and two-thirds of the coal I should accept the opinion of a practical loading contractor if he said that the best proportion was one-third from ground and two-thirds from wagons.

P. H. BROWNE, Esq., C.B.E., of Messrs. Mackinnon, Mackenzie & Co., Calcutta.

WRITTEN STATEMENT.

1. (a) **Present freight-level.**—At the present time steamers would probably be available for coal voyages from Calcutta at about the following rates:—

	Rs.	a.
To Rangoon	5	0
Singapore	6	8
Colombo	6	8
Bombay	7	0
Madras	6	0
Karachi	7	0

It is very unlikely that Shipping Companies would be prepared to contract for 12 months at above rates and for a 12 months' contract I consider rates may be taken as follows:—

	Rs.	a.	Rs.	a.
Rangoon	5	12	to	6 4
Singapore	7	4	to	7 12
Colombo	7	4	to	7 12
Bombay	8	0	to	8 8
Madras	6	8	to	7 0
Karachi	8	0	to	8 8

(b) **Basis on which freights are fixed.**—Rates are naturally controlled to a considerable extent by the laws of supply and demand in the world's freight markets. Apart from this they are as far as possible fixed to cover expenses and to give a reasonable return on capital.

(c) **Possibility of reducing freights.**—At the present time rates are not capable of any reduction if the conditions mentioned in the preceding paragraph are to be fulfilled. It is however always possible that certain owners might prefer to run their steamers at a loss rather than lay them up for an indefinite period.

2. **Comparison of freights between (1) South Africa and (2) Calcutta and certain ports.**—Freights on coal from South Africa to Bombay, Colombo and Singapore, considered on a mileage basis are certainly lower than those from Calcutta to the same ports. The coal trade from Durban eastwards is to a great extent catered for by tramp tonnage. The owners of tramp tonnage are often desirous of working their steamers from Western waters to loading ports such as Bombay, Karachi or ports in Java, Siam and Burma. Take

for instance a steamer which has discharged cargo at Cape ports and is fixed to load sugar from Java to United Kingdom/Continent. It will pay that owner to accept little more than a ballast rate for a cargo of coal from South Africa to Colombo or Singapore rather than send his steamer to Java in ballast. Steamers working from west to east would at all times accept a very low rate *en route* where they have reasonable employment offering in eastern ports. The foreign trade from Calcutta is to a great extent dealt with by liners rather than by tramp tonnage, and it is therefore not a port which attracts tramp steamers on the look out for employment. There are of course from time to time steamers free in Calcutta and possibly chartered or in prospect of being chartered from Bombay or Karachi home-wards. To such steamers the rates shown in paragraph 1 (a) to ports towards Bombay would appeal as against a ballast voyage round the coast. Other reasons for the lower rates from South Africa are:—

- (1) Far better despatch at loading ports.
- (2) Present high rate of exchange.

3. (a) **Is present freight level paying?**—The present level of freights is not a paying one, *vide* reports of Shipping Companies published every week in "Fairplay" and other shipping journals.

(b) **Comparison with pre-war level.**—Steamers expenses have increased by about 75 per cent. as compared with pre-war figures. The cost of bunker coal—to take one item of expense—has gone up to the extent of over 100 per cent. Coal freights from Calcutta have not increased to that extent. In the years 1911 to 1913 coal freights from Calcutta to Bombay averaged out to about Rs. 5 per ton. This compared with Rs. 7 per ton in 1924 as per paragraph 1 (a) works out to an increase of only 40 per cent.

4. **Effect of general rise in freights on South African freights.**—A general rise in the freight level throughout the world would affect the coal freights from South Africa to Bombay, Colombo and Singapore, as with more remunerative employment in view at the end of the coal voyage an owner would not be prepared to incur the delay of loading and discharging a cargo of coal, except at a higher rate of freight, as the daily earning power of his steamers would have increased proportionately.

5. (a) **Freights from Japan to Singapore.**—Freights from Japan are on a very low basis, for the reasons given in paragraph 2. There is also a considerable quantity of ore shipped from near Singapore to Japan, so a coal voyage to Singapore places a steamer in position for a cargo of ore back to her home port.

A large amount of old tonnage has been acquired during the last few years by Japanese owners. In many cases old steamers have been bought up with financial assistance from Japanese Banks, and rather than lay up their steamers, owners will accept practically any rate with a view to meeting the interest due to the Banks.

(b) **Freights from Australia to Singapore.**—The remarks in paragraph 2 apply equally in this case.

6. **Conference—control and rebates.**—The rates of freight on coal from Calcutta to ports named are not controlled by any Conference, nor are they subject to any private rebates. The coal trade has always been so far as shipping is concerned an open one.

7. I have no information to the effect that the Union Castle Coy., being interested in Natal mines, deliberately keep down the level of coal freights from South Africa in order to facilitate competition of Natal coal in foreign ports, and I think that this is extremely improbable. The Union Castle Line are a Liner Company rather than a tramp Company, and I am not prepared to believe that in these days of low freights they would accept anything lower than the best market rate offering in order to assist Natal coal mines in which they may have some interest.

(Oral evidence—7th January 1935.)

1. (a) **Present freight level.**—I should put the present freight level from South Africa in the region of 11s. 6d. to all the ports named in my written reply to this question. A very cheap steamer was done recently from Durban to Singapore at 11s. 3d. Recent other charters from Durban that I know of are at 12s. 3d. to Bombay and 13s. 6d. to Colombo but with 11s. 3d. done to Singapore freight at 11s. 6d. would probably be offering to Colombo and Bombay.

(To Sir Rajendra Nath Mookerjee.)—The rates which I have quoted in my reply are not the rates asked by my own Company, but bed-rock chartering rates: of course we are not the only people doing coal freight. I should say that charter rates are at present absolutely down to bed-rock level and that no reduction on them is possible.

These rates represent a reduction on rates in recent years. Owners are at times taking a non-paying rate rather than lay up steamers. I can let the Committee have figures for the corresponding freights in previous years since 1912. So far as I remember off-hand there were no fixtures between Calcutta and Singapore at this time last year, but for Colombo the freights were probably in the region of Rs. 7-8.

(b) **Basis on which freights are fixed.**—(To Mr. Banerjee.)—By a reasonable return on capital I mean a return of about 7 per cent.

There are many cases in which the increase in the freights on other commodities was as great as on coal. I shall give the Committee figures for the freights on rice between Calcutta and Colombo and Rangoon and Calcutta.

2. **Comparison of freights between (1) South Africa and (2) Calcutta and certain ports.**—If there were a general rise in freights it would be to the advantage of Indian coal, that is, it would affect Indian coal less unfavourably than South African coal. If there were such an increase in world freights the rates from Calcutta would probably go up in sympathy but South African ports are more attractive to Tramp Tonnage than Calcutta and would therefore probably feel the upward tendency first.

(To Mr. Whitworth.)—The present freights leave a very small margin of profit if they leave any profit at all; in many cases there is definitely a loss on them.

There will practically always be cheap tonnage at bed-rock rates available from Durban to India, as steamers proceeding eastward will take very low rates to carry them in the direction of their port of loading in the east.

(To Mr. Bray.)—If it were possible for a steamer to load in Calcutta in four days, it would of course all be helping towards lower freights, although freights are at such a low level at present that I cannot say that it would affect them to any large extent, but, with improvements in loading, tramp steamers would be more attracted to Calcutta. At present despatch in Calcutta is definitely bad. When I speak of despatch at a loading port, I mean the number of days taken to load a steamer there.

3. **Comparison with pre-war level.**—(To Mr. Banerjee.)—As regards my remarks that steamers' expenses have increased by about 75 per cent. over pre-war figures, I may quote their daily running cost, which, I calculate, has increased by 76 per cent. "Running cost" covers such items as wages, cost of feeding crews, cooly charges, coal, etc. The increase in the cost of bunkering charges has been over 100 per cent. The Liners bunkering contract before the war was only Rs. 8 t.i.b., now the figure is Rs. 17 t.i.b. I have not heard of any contract at Rs. 13 having been made lately as far as liners are concerned and I doubt whether it is correct, though business might have been done at that rate for odd steamers: of course the price of coal is coming down.

Extract from letter of January 15th, 1925.

(Vide oral evidence, reply to question 3.)

I have gone closely into the question of freight rates between 1912 and 1924 which I promised to give the Committee for purposes of comparison with coal rates from Calcutta for the same period.

Mr. Banerjee originally asked for rates on rice between Calcutta and Colombo, and also between Rangoon and Calcutta.

The rate on rice from Calcutta to Colombo is not really controlled by the world's freight market, as most of the liners loading in Calcutta to the United Kingdom/Continent *via* Colombo reserve a considerable amount of space for shipments of tea, etc., from Colombo. In order to fill this space between Calcutta and Colombo they will accept practically any rate for rice or any other cargo offering, and the figures would therefore not give a true reflection of the market for purposes of comparison with coal freights over the same period.

Rice is, however, the main export from Rangoon and full cargoes of rice are frequently shipped there for the different ports in India. I am therefore of opinion that the freights on rice from Rangoon to main Indian ports will offer a very interesting comparison with coal freights from Calcutta to Rangoon, Colombo and Bombay.

I now enclose the following statements:—

- (a) Market rates on coal from Calcutta to Rangoon, Colombo and Bombay for each year 1912 to 1924.
- (b) Market rates on rice from Rangoon to Calcutta, Colombo, Cochin and Bombay for same period.
- (c) Market rates on Linseed, Jute, etc., from Calcutta to United Kingdom for same period.

You will of course realise that there are often changes in rates during a year, but I have as far as possible taken an average mean rate for each year, and I hope the statements enclosed will be of assistance to your Committee.

सत्यमेव जयते

**Sir WILLOUGHBY CAREY, Kt., of Messrs. Bird & Company and
Messrs. F. W. Heilgers & Company, as representative of the
Bengal Chamber of Commerce.**

Note.—The Chamber submitted no written statement in reply to the questionnaire. Sir W. Carey submitted the following note in connection with his oral evidence.

Notes for Coal Enquiry Committee, 29th January 1925.

So many of the points of evidence have already been given and dealt with that all I propose to do in this note is to emphasise as far as possible some of the items dealing specially with export.

In order to enable the export trade as far as possible to meet the competition in outports with South African and other foreign coals the question seems to be what further assistance can be given to the Trade above the one-rupee freight rebate already sanctioned by the Railways and Government. The Export Trade originally asked for Rs. 2 rebate, and from information since received it would appear that the extra one-rupee rebate is still required and should be granted.

In addition to this it seems pretty generally accepted that with regular and sufficient supplies at the collieries of a suitable type of wagons for use

with Mechanical Loading and Grading Plant a reduction in colliery costs of from 12 annas to Re. 1 per ton might be hoped for. Over and above this the Port Trust, I believe, intimated that with an increasing export trade their charges might be reduced, to a maximum of 6 annas to 8 annas per ton if ever the export trade reaches former figures.

Expediting loading at docks.—Over and above these reductions a revision to speedier loading of ships would, it may be expected sooner or later, make the export coal trade more attractive to steamship owners and reduce freights. The reduction of freights is of course subjected to the course of world-markets but, with the present plentiful supply of tonnage, it might be anticipated that sooner or later competition would give the trade any advantage in freight to be gained from speedier handling. As an instance the saving on a 7,000 ton steamer, as between 8 or 9 days' loading (as is about the present average) and 4 days' loading (as was the average pre-war), would be 4 days at about Rs. 1,200 per day cost or, say, 12 annas per ton on the cargo.

With the dock as at present constituted there are two ways of saving time on ships loading, one being the dumping of a portion of the cargo ready for the ship on arrival and the other storage of coal ready for wagons on the Port Commissioners' grid-lines. Probably temporarily it would be necessary to revert to the dumping of coal until wagon side-tipping plant could be installed, but this means more breakage in handling. Undoubtedly the right method, in accordance with practice in every other large Coal Export Dock, is the provision of wagon-tipping plant as this attains the necessary speed and preserves better the graded size of the coal. This entails the storage of coal in wagons for some few days prior to the arrival of a ship and here again this is in accordance with modern practice for coal export elsewhere.

Even without the provision immediately of tipping plant an advantage would be gained by this method of storing coal in wagons in sufficient quantities prior to the ship's arrival. I am assured that the labour would be available to handle this coal direct from the wagons without any dumping at the necessary speed for the desired saving of time in loading.

The Railway Companies may object that this would mean an extra delay to their wagons but I would point out in this connection that an average speed of the coal trains of only 5 miles per hour of full wagons down and empties up would mean only 36 hours each way to Jharia and proportionately so much less to the Ondal, Raniganj and Asansol areas. The attainment therefore of what does not appear to be an excessively fast timing would give plenty of margin for wagons at the docks for ships without creating any increase in the time of the turn-round of these wagons from the collieries down and back again according to present timing.

I suggest that these savings ought to be possible of attainment and that they would be the correct method of assisting competition as against the proposal for a countervailing duty. One main reason which I give for this is that the two chief markets with the re-capture of which we are concerned to-day are Ceylon and the Straits, to which with Aden, the countervailing duty would not apply and that only by cheapening export can we hope to compete. Another objection to the countervailing duty, which has already been brought out and to which I only refer in passing, is that it might have the effect of raising the price of coal to all Indian consumers, whereas the desideratum for a commodity like coal which is the basis for most industry's power, is that it should be as cheap as possible. Please let it be understood that the Coal Trade would not object to the countervailing duty as such but only on the above grounds consider that it is not the best way of assisting the trade of the country.

Comparative merits.—A point has been raised with regard to the difference in quality of Indian and African coal and with regard to this I think evidence has been given that guaranteed good quality Indian graded coal should be able to compete in quality with foreign coals on a level basis of price

Staithe in the river.—I understand that there is no idea of providing for coal traffic in the new docks, where the bringing in and out of ships, with a great saving of time, is much easier than in the present docks. I would suggest therefore if possible an increase of coal loading facilities in the river at Garden Reach or below it when laying out the new yards in the docks. This would be the best method of saving time on ships. To have staithes, or wharfs, with wagon tipping appliances, would save much time and money to ships compared with the present system and would be similar to facilities in export-ports at Home. This could not however come off for some time whereas we are concerned as a trade more especially with the necessity of immediate efforts to re-capture our markets this or next year. Therefore I would suggest, for a more immediate assistance, that when considering the laying out of the yards outside the new docks, which I understand are just now in contemplation, such arrangements for feed lines and yards should be made in conjunction with them as to improve the possibilities of the present coal docks.

Capacity of the railways.—In this connection I have read the evidence of the E. B. Railway regarding the line between Ballygunge and Majerhat and though accepting the statements made I would point out that before the war, with I suppose the same facilities, 3 million tons of export coal was handled, and apparently dealt with through this bottle-neck. Incidentally I believe it to be the case that the E. I. Railway and B. N. Railway are even better equipped than before the war when they carried this three million tons of export coal, so that it seems that there should not be a very great need for additions. This however is a matter for the railways themselves and the Port Trust and I only mention it as it appears from reading the evidence.

Regular supply of wagons.—Dealing with the Trade's request for one-rupee further rebate and the objections that this might not be a reasonable request as it might possibly mean a loss to the railway, I should like to say that, if a regular supply of suitable wagons could be made to the collieries so that the anticipated saving in colliery-costs might be obtained, a saving of even 8 annas per ton (which would naturally very quickly come off the sale-price to the railways, owing to competition for their orders) would on their purchase of 5 million tons per annum mean 25 lakhs saving to the railways as a whole: and if as stated by some the saving should amount to Ro. 1 per ton it would mean 50 lacs to the railways. Whatever the figure, the E. I. Railway and B. N. Railway would benefit in proportion to their purchases and this surely might be reasonably looked upon as a set-off against the extra one-rupee still asked for. Naturally this saving would not be realised at once, but would begin to be as soon as collieries knew that regular and suitable supplies are available and would be given, so that they would be saving in expending money on colliery handling-plant, instead of as at present having to waste it in storage arrangements.

Type of wagons.—I would suggest that 4 wheeled open sided trucks be specially provided for shipment of coal, and for mineral traffic generally to down-stations such as mills, depôts, and particularly docks, and that these be reserved at least in sufficient numbers for mineral traffic only, as is done for Coal Trades elsewhere. If closed wagons are required for up-country coal-supplies these could be supplied and loaded separately from the supplies for export or down traffic. I venture to suggest that if this system is possible to be followed, with a good average speed of trains, run over special mineral lines which I believe already largely exist, railways would find that the same quantity of coal could be carried in fewer wagons, and that provision of these special mineral wagons would in no way interfere with their general traffic. Trains with closed wagons could still be run to the general docks for ordinary goods traffic.

With reference to the various suggestions as to other bridges which have been made I would only wish to point out that the present enquiry is as to the possibility of improvements in assistance and savings during this and next year, within which period none of the suggestions could take effect.

I would also like to say with regard to over-loading, that very troublesome and vexatious subject, that this should be done away with very largely by the supply of special mineral wagons of the type suggested, which could be loaded flush, and on which no question of over-loading should then be raised.

Retention of Coal Transportation Officer.—With reference to the question as to the maintenance of the Coal Transportation Officer's office and the Coal Advisory Board, I am of opinion that this should be kept on so long as there is any shortage of supplies. I am sure that Trade would like to be informed if possible how long it will be before regular supplies of suitable wagons may be expected to be always available.

(Oral evidence—January the 29th, 1925.)

The written note which I have put in represents the views of the Chamber.

Costs at coalfields.—As to the question of ordinary cost of working it is difficult to see where one can do a great deal but, from the point of view of an improved regular wagon service, the general opinion among colliery people who have gone into the matter carefully is that it will be possible to save from annas eight to rupee one a ton.

I do not favour the suggestion that an expert should be brought out from South Africa or home with a view to seeing if he could suggest economies in working. I am not aware that the cost of raising in South Africa is cheaper. One of our main difficulties in getting a reduction is the labour and in particular the short period for which labourers will work in return for the money that they get. As to other costs they have been and they are being carefully combed over. Possibly there may be savings in some direction but in the larger collieries anyhow, the methods, I think, are pretty well up-to-date.

Rebate.—(*The President.*)—You probably do not realise that if the rebate is raised to Rs. 2 railways will be getting five annas less than on the pre-war freight: railways get on freight from Jharia now (taking the Re. 1 rebate) Rs. 2-15-5 as against Rs. 2-4-9 pre-war. I have suggested in my note that there will be a possible off-set to the railways in the cost of the coal that they buy: I do not think that the development of the railway-collieries will make the railways self-supporting within the period with which this committee is dealing, *i.e.*, during the next two or three years when the urgency is greatest. I am aware that the railways argue that there must be a time when an increase of traffic only means an increase of loss. Anyhow to get back to pre-war freight they could make a further reduction of ten and a half annas by increasing their rebate. I hold to the opinion that what we want is another rupee just as we asked for last year. As regards the argument that even if the freight is reduced exports cannot rise to the pre-war figure because the markets have contracted owing to the competition of oil fuel and electricity, I realise that Bombay is a decreasing market but I am chiefly concerned with Ceylon and the Straits, including Sabang. We may increase the amount of coal exported by cutting prices on the basis of the improved services at the collieries where, given regular supply of suitable wagons, we may hope for savings. I do not think from the figures I have seen that it is impossible for us to cut into the Sabang, Ceylon and Straits coal-trade again.

Surplus of first class coal.—If we do not export first class coal in spite of its being able to obtain a good price in India many lower grade collieries will have to close: we have to sacrifice a certain amount of first class coal in order to help the other coals. An outside market is necessary if the trade is to be in a healthy condition. There is no reason to fear that the total of first class and medium quality coal will not be sufficient, but the pressure on the coal trade is that the raisings are expanding or are likely to expand more rapidly than markets.

(*To Mr. Bray.*)—I do not expect that the continued expansion of Government railway collieries will lead to any great or immediate difficulty.

Loading coal at docks.—(*To Mr. Stuart Williams.*)—Steamers of late have been averaging about 1,000 tons more than they used to, or perhaps 1,500 tons. Very few steamers in pre-war years were under 5,700 tons and quite a number were 6,300 or 6,500.

Slow loading at the docks.—I do not consider this to be the fault of the docks but of the railway conditions. Labour is sufficient and the Port is able to handle the coal, given the wagons.

Storage of coal in wagons at docks.—I have tried to show that on improved timing of the trains the extra time needed for holding coal in wagons in order to facilitate loading might be saved on the road, if special wagons were kept for mineral traffic only: so I do not think that my proposal will make the wagon-position worse. As to the argument that it is not possible to introduce the change just now, what the coal-trade cannot understand is why railways could handle 3 million tons for export in 1914 and now find it difficult to handle 1½ million. Of course there has been a tremendous increase in other traffic but that is why we suggest a special supply of wagons for the mineral traffic, following the principle which is accepted in most coal-exporting countries. It seems a reasonable solution on the facts before us.

For the immediate present we suggest that the dumping should be allowed again, but it is not good for the coal and it is not an up-to-date or reasonable method. What I should like to see is something like the facilities given at Hull. Of course the English collieries have their own wagons which we have never been allowed to have but that is another reason why we suggest special wagons for mineral traffic. We are not asking for much, only ordinary 4-wheeled open wagons, which could be tipped side-ways. I think that with them the Port could introduce a method of handling which would very greatly speed up loading.

(*To Mr. Legge.*)—I agree that it would be advisable for the managing agents, when arranging for supplies of coal for a ship, as far as possible to concentrate their orders at collieries serving the one dépôt station, and I agree that it would be well if they would get in touch with the Coal Transportation Officer and arrange these points in consultation with him. Of course at times pujahs interfere, but groups of collieries would do all they could do assist. The idea has not been put to me before but we might work out a scheme on these lines to improve despatches. It would be of assistance to open the steamer stations earlier. Even if this were not possible, the collieries for their own sake would try to assist on the lines now suggested.

Reduction of port charges.—The reduction which I propose would be on shipping and river dues. My idea is that a reduction on the river dues would be helpful when trade improves but I do not say that the port can afford to give it to us now. We should, of course, rather have the assistance now if it were possible, but we understand that their suggestion is to give it when things improve. My claim is that the rebate of Re. 1 already has to some extent helped the export trade last year somewhat in spite of steamer freights being increased at that time and in spite of the rise in exchange, regarding which no one can prophesy what will happen.

Sidings.—I should still like to press for loading wharves in the river though I know that there are difficulties.

(*Mr. Stuart Williams.*)—There is the difficulty about the cost of land and the difficulty of getting 35 feet of water on a shelving bank which would mean an expensive jetty, the more expensive because it would have to be strong enough to carry heavy machinery, 30 or 40-ton cranes for the 5-ton ships or a very much heavier hydraulic crane). I think that one crane will serve as at Hull: there is plenty of room there to move the ship up and down.

(*Mr. Stuart Williams.*—In price there is not much difference between a jetty and accommodation inside the dock, and convenience is greatly in favour of the docks.) I suggested it because with a jetty in the river we might save a tide and that would mean often a saving of a whole day. I do not expect any increase of exports beyond the pre-war figure and we shall be satisfied *pro tem.* if we get back to that.

Rebate on bunker coal.—It would be a good thing if a rebate could be given to bunker as well as to export coal because bunker coal is in direct competition with coals brought in on the ship instead of bought in Calcutta. We are as regards bunkering in direct competition with Colombo. It pays steamers to bring coal here in their bunkers enough to carry them back to Colombo.

I often hear that various vessels are ceasing to take full bunkers at Calcutta and are bunkering at Colombo: bunker contracts now are paper contracts, *i.e.*, contracts which are never utilised. The owner makes a contract securing the right to take coal in Calcutta but he often at the present does not avail himself of it.

Maintenance of quality.—I think a certificate for export coal would be a good thing. But whether it should be given by a Board or not is a point on which I am not myself prepared to express an opinion. Grading for size at collieries brings us back to the question of regular wagon supplies, granted which there would be no great difficulty.

I agree that a certificate showing the colliery and the seam and the general analysis of the seam would meet the case. This would not be the same thing as selling on analysis, which I would not yet do under our labour conditions. I agree it is desirable that buyers in foreign parts should have information about all Indian coals such as they have about South African.

Regular supply of wagons.—(*To Mr. Legge.*)—What I had in mind was a supply on which we could rely, knowing when we ask for wagons we would get them; and the wagons will have to be a suitable type, *i.e.*, in present conditions some type of open wagon. The saving of 25 lakhs to the railways depends entirely on a suitable supply of suitable wagons to the collieries.

Weighbridges at collieries.—(*Mr. Whitworth.*)—The average time for wagons in the weighbridge yards on the East Indian Railway is two days six hours mostly needed for adjusting and weighing: wagons from one of the railway collieries which has its own weighbridge are kept only six hours in the yards.) I agree that it seems reasonable for the larger collieries to put in weighbridges and to do their own marshalling and adjusting in return for a reduction in terminals of one anna per ton from the railway. But I should like to think this over. It would certainly be worth while to save 200 or 300 wagon-days on the Jharia marshalling yards by a method like this. The bigger groups of collieries will probably welcome this scheme.

Propaganda.—(*To Mr. Stuart Williams.*)—It is a fact that nowadays a prospective buyer gets very little information about the Indian coal that is offered but for many years since cessation of export was forced upon us propaganda was unnecessary because of this and also because all the large buying was done by the Mining Engineer. Before the war we continually sent out our men to various ports and did our own propaganda. Coal then sold on the name. We had agents in the ports and generally we sent out our own men to do propaganda. I myself for 7 years went round to every port and every big buyer, but this stopped when the buying concentrated in the Chief Mining Engineer's office, or as regards bunkers, when the contracts were made in Europe. Possibly it is correct that local agents have divided allegiance and sometimes they may not be suitable for their work. I would favour propaganda by each firm on its own account in the way in which it used to be done, backed by the additional advantage of certificates.

There would be no harm in getting out a hand-book through the Indian Mining Association such as are published by the Transvaal and Netherland East Indies. Before the war our firm used to get out such literature in the

shape of a calendar, a little booklet which gave instructions how Indian coal should be used, the different types of fire and the different arrangements of fire-bars necessary. Such a hand-book might be put out by the Indian Mining Association and supplemented by the firms' own work.

Overloading.—I should like to lay stress on the point of overloading: it is a nuisance to the railways and to us and involves great waste of time. I agree that the load line is more trouble than it is worth and therefore I suggest the special type of mineral wagons. I take it at present that the load line is put in because the wagon is used for general goods traffic as well as for coal: if it were designed for coal only the line would not be needed at all. We want wagons that can be loaded flush without overloading with any type of coal: this means a waste of wagon capacity with some types of coal but that would be unimportant when compared with the advantage of getting rid of the difficulty of overloading. I may remark that I suggest the special wagons only with reference to export coal: for upcountry traffic you would be using other types of wagons.

Bunker coal dépôt at docks.—As regards the suggestion made by the Bengal National Chamber of Commerce that there should be a bunker dépôt at the docks, it has generally been believed that there is no room there for such a dépôt, but it is undoubtedly a desirable thing if it is possible.

(*Mr. Stuart Williams.*—This is one of the points that came up before the Ports Enquiry Committee in 1913. There is one dump let out to Cory's but no real bunker dépôt. It is rather difficult to arrange for one and our impression was that the trade did not want it, though some years ago they made an effort in that direction.) The prospect of the trade applying for dépôts would depend on the charges levied. Previously ships always tried to get as much bunker coal as possible loaded while they were at the jetties in order to avoid the difficulties which attach to boats with coal going into the docks but a proportion of the coal always had to be brought into the docks. Also pressure was not so keen then as it is now with outside competition. If we could have dépôts in the docks, people who are keen on bunkering would probably like to try what could be done there. Anything which would help to bring down charges would be good.

**From Major F. COOK, Retired Admiralty Coaling Contractor,
Nabha.**

WRITTEN STATEMENT.

A. Possibility of economies on the coalfields.

4. **Possible savings in stacking charges.**—The expenditure of stacking coal at pitmouth should certainly be done away with. I know of no other part of the world where coal is stacked but sufficient trucks are supplied in England and South Africa to meet the requirements of all collieries while in the former place the colliery either own or hire from Truck Companies the amount of trucks required by them. The wastage resulting from stacking depends considerably on climatic conditions but is never less than 5 per cent. on each time of stacking.

B. Economies in transport to Calcutta.

6. (a) **Improvements in wagon supply.**—I have no knowledge of the way in which wagons are distributed in India but the railway should supply sufficient trucks to each colliery for any orders they have either for bunkering or export or for local consumption.

(b) **Their influence on costs.**—Unless export and bunkering coal is handled in this way very heavy extra charges must be added to the price of the coal as well as depreciation if stacked.

7. **Type of wagons.**—No coal-carrying wagon should be used for export and bunker coal other than *open trucks* which could be adapted for tipping direct into the ships at the ports, or into storage bins; in England at the Docks the end of the wagon is tipped and in South Africa the 35-ton truck is tipped sideways into the hopper.

8. **Railway freight.**—I have no knowledge of the railway freights charged on coal but if you wish to improve the bunker trade you must see that the railage is the very lowest possible even if carried at a loss.

9. **Work of coal transportation office.**—My opinion is that colliery owners should work entirely without any Government interference and I do not think there is any necessity or good reason for the Coal Transportation Officer. I consider that each colliery should make their own arrangements as is done in other countries.

C. Possibility of economies at the Docks and coal depôts.

10. **Port charges.**—I am not acquainted with the Port charges at Kidderpore Docks, but like railway freights they should be the very lowest possible if you wish to improve the export and bunker trades as well as providing up-to-date storage and handling.

11. **Improvements in handling wagon and results on costs.**—Coal wagons should be unloaded direct into the ship either by tipping or by other methods, and each large exporter should have a section of an elevated storage bin provided by the Dock Company in which trucks could be emptied direct should they be detained at the docks owing to the non-arrival of the steamer for which the coal was required. This system is in vogue at Durban and in America.

12. **Loading and shipping facilities.**—I am not acquainted with the facilities at Calcutta but any means to save the cost of handling coal should be adopted as a few annas per ton make all the difference in capturing the Bunker and Export Trade.

13. **Storage and stacking at docks.**—Storage should only be into large bins for if stacked in the open by hand and refilled into baskets or other articles the cost and wastage is too great. Re-inforced concrete bins alongside the coaling berths could be erected and the reloading into 6-ton automatic iron buckets should be carried out mechanically and not by hand labour. In Durban 6-ton buckets are automatically filled from the storage bins and wagon shoots and the only labour employed is trimming the coal in the ships holds.

14, 15 and 16. **Bunker coal.**—I have no knowledge of the facilities at Shalimar and Howrah.

Unless the charges for carrying coal from the collieries to the steamers are so rated as to allow a company to compete with bunker coal at other Ports you cannot expect to secure the business. You need a sympathetic government and enterprise on the part of the Colliery Companies.

D. Steamer freights.

17. **Steamer freights.**—As a rule steamer freights on coal to any Port are based on what return cargo there may be offering. In the case of steamers carrying African coal the Union Castle Company control all steamers bringing general cargoes to South African Ports and use them to take coal cargoes or part cargoes to Bombay and other ports from Natal at a low rate instead of coming over in ballast, to pick up a general cargo to Europe either at Bombay, Colombo or Karachi *via* Suez Canal. This enables them to quote very low freight or price for the coal cargo and so the Indian coal is under-sold by a Shipping Company who have controlled from 1912 all coal cargoes leaving South Africa for India.

E. Comparative merits and prices of Indian and other coals.

18. **Comparative methods.**—I have had many years' experience of Welsh and South African coals and from observations I know the Calorific Value of

Welsh coal is 10 per cent. better than South African coals and South African coals 10 per cent. better than Indian coals. Moreover the South African coals with which you have to compete are larger in size than Indian coals and free from shale and slack.

19. **C.i.f. prices of Indian coal at different ports.**—I do not know the price of Indian coal at pitsmouth but Natal coal of best quality ranged from six shillings to 6-6 shillings and Transvaal coal four shillings per ton free on rail pitsmouth. The c.i.f. price at Madras, Colombo and other ports can only be determined on what steamers are employed as it would certainly not pay to run special steamers unless a return freight was assured. This is why large shipping companies like the Union Castle Company can make a monopoly of the coal trade in any port they can reach within reasonable distance of Durban as most of the South African trade steamers, as already stated, are either chartered or controlled by them and generally complete their cargo at Durban and then proceed East with coal to pick up return-cargo *via* the Suez Canal.

20. **Prices.**—I have no knowledge at what coals are selling at these ports but it is easy to ascertain from any large coal and bunker contracting firm such as Lambert Bros. of London who can give you the annual rates for all classes of coal available at any of these ports. All their contracts are made annually for bunkering steamers and not for a term of years as I understand is often done in the Indian coal trade which is certainly a mistake.

21. **How competition can be met.**—Indian coal can compete with other coals at these ports provided the f.o.b. price is low and as explained the freight is generally based on a full cargo when otherwise proceeding in ballast to any of the ports named. In this way a very small freight would be charged by the owners of the steamers, unless they are controlled by the before mentioned Shipping Company who would fix such a price as to keep you out of the market.

22. **Possibility of new overseas markets.**—As regards new markets this should be known to the coal brokers at Calcutta and it is all a question of first cost and freight whether you could compete with other coals. You can only make your contracts through London Brokers or their local agents at all the ports you can serve. Such contracts are made before the end of each year for the following year and your Trade Commissioner in London should be able to help the coal trade.

23. **Special assistance to other coals competing with Indian.**—Indian coal on many occasions could successfully compete with Natal coal at South African ports, but the duty of Rs. 3 per ton of two thousand pounds levied by the Union Government closes the market to Indian coal on any occasion and it would only be purchased when either strikes or other disturbance prevent the supply of Natal coal to the Cape Ports. At the same time great concessions and other assistance are given by the Union Government to foster the coal trade and in many cases certain work is done at cost or less than cost to secure and retain the Bunker and Export Trade. This should be adopted by the Indian Government with every ounce of power they possess; in fact a substantial bounty might be given for one year and without doubt a very large volume of trade could be recovered with much financial gain to India not forgetting that the action of the Government practically lost you the export trade.

F. Grading, inspection and certification of coal.

24. **Grading of coal.**—As a rule in England and in South Africa the name of the colliery supplying the coal is sufficient for the buyers. At the same time an inferior coal should be exported or used for bunkering. Many of the South African coals are liable to spontaneous combustion and are now known to the shipping companies and selling agents. Some coals are not safe to use for ships bunkers.

25. **Classification into grades.**—There should certainly not be more than two grades of coal for export or bunker.

26. **Measures to effect grading.**—I suppose the various Indian collieries guarantee the calorific value of their coal and on these lines the grading of the coal could be made possible.

27. **Control of grading.**—I do not see any necessity for a Government Official or a Grading Board. The more these people are kept out of such a trade the better for the trade. The grade of each coal will soon be known to buyers and a guarantee from the collieries of its calorific value and being clean and well screened is quite sufficient to sell any good class coal.

28. **Inspection and certification.**—The system of inspection and certificates are not needed and would only cause confusion. My above remarks answer this question.

29. **Compulsory versus voluntary grading.**—If the coal trade fail voluntarily to establish a grading system it is certainly not for the Government to enforce such a thing as the principal losers would be the colliery companies.

31. **Sale on analysis.**—This is the only way in which coal could be sold satisfactorily, that is guarantee of quality and calorific value determined by analysis, and any good class Indian coal would soon make a name for itself and be asked for by shipping companies in their yearly contracts for bunkers. In most cases with the shipping companies calling at Cape Ports proceeding to Australia and New Zealand they specify one or more collieries' coal and will take either through their agents and they generally refuse to accept any other coal but those so named.

G. Pooling of coal.

32. **Practicability of pooling and its effects.**—Pooling of coal is quite possible and practicable and will save much delay in bunkering ships or loading cargoes for exports, at the same time save delay to ships and wagons. This can easily be accomplished by an arrangement between certain colliery companies turning out an equal quality of coal.

33. **Effect of improved facilities on pooling.**—(a) Pooling of coal would save everybody connected with the transaction and is often done in other countries. I doubt very much if there is an adequate supply of wagons for any one of the collieries; this should be rectified by the Government Railways. In other countries the coal when despatched from the collieries is given the greatest possible despatch and treated as "specials" to meet export and bunker requirements but I doubt from what I have seen if this is the case on the Indian railways.

(b) Even if additional facilities were provided at the docks pooling should still be a recognised thing. At the same time it is necessary for any port wishing to do a bunker trade to have the very latest types of storage bins and other provisions for economic and quick handling of coal by mechanical means.

34. **Compulsory versus voluntary pooling.**—A compulsory system of pooling is not desirable except in the case of emergencies such as war, etc., but in ordinary times it should be left to the colliery owners to settle this matter between themselves.

In conclusion I can say you can recover and increase the lost Export and Bunker Trade in 2 or 3 years if it is tackled in the right spirit by the Government and the collieries together with their agents in London and abroad.

D. U. DAVE, Esq., Agent, Rajapur Colliery, Jharria.

A. Possibility of economies on the coal fields.

1. **Reduction in cost at pit-head.**—There is only a little possibility of reducing the cost of coal at the pit-head and that is by reducing the present wages of the miners, but this will not be sensible without disturbing, for some

time, the present peaceful working and it is unlikely that the trade will be prepared to face such a disturbance.

There are collieries which have got loading accommodation at a distance of about two miles away from the collieries and these have therefore to pay a cartage of about rupees one to two per ton, besides the heavy loss of coal in transit from the colliery to the siding. If the loading accommodations are extended up to the collieries so as to do away with the cartage or to reduce the same to the minimum, it will mean a great saving in the cost of coal into wagons. There are many collieries which have suffered much on this account, so much so, that many of them have been entirely ruined. Some of them are already closed, whereas others have been heavily indebted to money-lenders.

To bring these collieries to a little healthier condition is the duty of the authorities and this matter therefore is important in the interest of the coal industry.

2. Effect of recent increase in wages.—The recent increase in the wages has added to the cost of production by about four annas per ton but this is very insignificant when compared with the taxes and other incidental charges with which the industry has been saddled.

3. Effect of legislation.—Unless the details of the legislation are known, no opinion can be expressed on this point.

4. Possible savings in stacking charges.—A clear charge of four annas per ton would be saved if the coal is despatched as it is raised instead of being stocked indefinitely long and thereby allowed to be subjected to weather conditions and the consequent loss in its value.

5. Wastage from stacking.—My own experience is that the usual wastage in the stocks is five per cent. minimum but I have seen instances in which ten per cent. wastage has also been noticed.

B. Possibilities of economies in transport to Calcutta.

8. Railway freight.—My opinion is, the lower the railway freight, the greater the encouragement for shippers to export coal *via* the sea route.

9. Work of Coal Transportation Officer.—The work of the Coal Transportation Officer in view of the bad scheme, has not assisted the smaller concerns. In fact, during the last two years, the scheme has become the subject of severe criticisms. The scheme obviously is in the interest of larger concerns at the cost of the smaller ones. The Government have already got in their possession a number of complaints on this subject. There are collieries which had received under the stress of the scheme a wagon supply of an average of 10 to 12 wagons per month (namely, 160 to 200 tons per month) notwithstanding the capacity of the collieries to raise and to despatch 2,500 tons a month. Can a colliery concern stand in the market with a despatch of only 100 to 200 tons a month? Certainly not.

If the ruin thus brought upon the smaller concerns by the scheme is considered to be in the interest of the coal industry, then, I have only to keep quiet. However, if a new scheme is formed whereby the smaller collieries may not suffer for the larger collieries but they may get a reasonable and a regular supply of wagons with a minimum of at least two wagons per day and if the Coal Transportation Officer works the scheme with due regard to the smaller concerns, then his appointment will be justified in the interest of the industry and in that case, the trade will appreciate the labour of the Coal Transportation Officer.

D. Steamer freights.

17. Steamer freights.—In old days, the steamer freight to Madras was something near to Rs. 2-8 to Rs. 3 per ton and that to Bombay and Karachi Rs. 3-8 to Rs. 4-8 per ton. It was at that time that the best Bengal coal was quoted in the Bombay market c.i.f. at about Rs. 12 per ton. The ruling price

of coal in Bombay was at that time based upon 1'30 on the basis of the price of the Cardiff coal. The position at present is very much altered and the present rate of sea freight needs therefore no further explanation than that it is much too high.

E. Comparative merits and prices of Indian and other coals.

18. Comparative merits.—As stated above, in the old days if the price of Cardiff coal was c.i.f. Rs. 18 per ton, then the price of the best Bengal coal was Rs. 12 and the buyers had to choose between the two qualities what to purchase. Any reduction in the price of Cardiff coal used to make the Bengal coal comparatively cheaper. This was what I had myself experienced in Bombay while working for a large European house interested in the import of both foreign and Indian coals.

21. How competition can be met.—The only remedy to allow the Indian coal to compete with the foreign coal at the Indian ports is to levy a countervailing duty on the foreign coal and more particularly upon the subsidised Natal coal, the competition by which coal is unfair in every respect.

23. Special assistance to other coal competing with Indian.—It is the Natal coal that has been receiving special concessions at the hands of its Government and the effect of such concession has already been brought to the notice of our Government and though several protests had been raised against this, it is a pity no actions to give us relief have as yet been taken. The committee might ask for the record of the protests made by the Indian Mining Federation and the recommendation of the legislatures, in the Legislative Assembly proposing a countervailing duty on this particular coal equal to the amount of the subsidy which the Natal coal has been receiving at the hands of its Government.

F. Grading, inspection and certification of coal.

24. Grading of coal.—In my opinion, without facilities, at the depôts, grading of coal will not be possible, but if facilities at the depôts are provided by railways, the grading of coal should be left entirely to the collieries, without any interference of the Government. The trade should itself settle the grade of its particular coal for the buyers to approve of it. No interference by the Government will be viewed with any favour by the trade and more particularly by the Indian Section.

G. Pooling of coal.

32. Practicability of pooling, and its effects.—This is a matter impossible and if put into practice will create too many complications to be overcome. The Calcutta Coal Combine and its failure are the barefaced instances to convince any sane business man of the impracticability of the pooling system. Any attempts made in this direction will be futile.

General.

In conclusion, I would say that the questionnaires have very much ignored the most important matter, namely that of the inland trade. If the coal industry is to be allowed to survive, at least the remedy is:—

first to remove the control which was only a war measure and therefore not needed now that the war has been over for several years. The trade should be allowed to run unfettered and without any interference by the Government. It is the control that has become a hard brake upon the free growth of the industry. If the control is removed once for all, then, with it, will become removed the Coal Transportation Department, unless the trade requires this department to act on behalf of both the Bengal Nagpur and East Indian Railways to deal with the supply of wagons to the collieries, on the lines to be adopted suitable to the trade. Secondly the pre-payment of railway freight is also not to a small degree responsible for the downfall of the coal industry. It has created upon the industry a great financial stress and as this was also a war measure, it

should be withdrawn and replaced by the old "freight to pay" system. It is only the concerns, who feel the pinch, should be able to understand the stress of the freight prepaid system and as such, the protests hitherto made have not appealed to the authorities. The longer the system will continue, the greater will be the hardship upon the colliery owners, and that this, to a great extent, will add to the downfall of the industry.

Further the recent increases of the railway freight by about 30 per cent. have also done a great harm to the coal industry. There was a time when the railway freight to Bombay was Rs. 11 per ton and now it is about Rs. 15-8 per ton. This abnormal increase in the railway freight has encouraged the subsidised Natal coal to get a firm hold in the Bombay market, so much so, as to oust out the Bengal coal from one of its largest markets in India. The railway freight should therefore be reduced for all stations in India and more particularly for the ports at which the Indian coal has to fight with the foreign coal.

The Government and the Indian Railways must give preference to Indian coal and not purchase foreign coal and more particularly the subsidised Natal coal as such purchases, more often than not, encourage unfair competition against the Indian coal.

Considering the position of taxes, upon the industry, it will appear that these are too heavy to be borne even in normal times, much less in bad times and they should therefore be investigated into, and reduced to the minimum and on a basis which the trade could bear even in bad times.

Collieries having accommodation and means should also be given extension of sidings at least to half rake capacity say 25 wagons, so that they may as and when practicable load half rakes which will facilitate shunting and marshalling of wagons at the collieries, at the booking depôts and also at the several junctions *en route*.

Sufficient space should be provided at all depôts so that sizing and grading of coal can be done without any inconvenience and if facilities are given to despatch coal as it is raised, then the depôts will not be jammed and picked loading will not therefore be any impossibility. This will stamp out the complaints as regards the quality of the Bengal coal.

Unless a regular wagon supply is made, the collieries cannot maintain a trained complement of loading coolies and avoid complaints as regards bad loading.

Now that the existing collieries are producing coal more than the country needs, no further coal fields should be allowed to be opened unless the market expands for such increase of production. The present over-production is a menace to the future of the industry.

If more coal is needed, the existing collieries can be developed by extending facilities to them.

The Loco. contracts should be arranged in such a way that all the collieries capable of producing coal for Loco. use may get a chance of business according to capacity unless the prices of such collieries are too high. This will ensure many more collieries a regular wagon supply to enable them to avoid accumulation of stocks. It will also reduce their general charges and thus bring down the prices at pit-heads.

A. FARQUHAR, Esq., President, Association of Colliery Managers in India.

Letter dated the 1st November 1924.

It is considered by my Council that an expression of opinion regarding the present stagnation in the Coal Trade would be helpful to you in the

investigation which your Committee is presently engaged upon, and I have been instructed to address you as follows:—

Due to the more modern equipments which have been installed in the coalfields in recent years, and also due to the greater complexity of labour affairs combined with more advanced legislation, very little economy, if any, can be effected in the actual production of coal at the collieries.

Influence of wagon supply on costs.—It has long been recognised by my Association that the chief cause of inefficiency lay without the colliery control altogether and we venture to suggest that the importance of the Railway inefficiency, has in the past not been put in its proper perspective in its relationship to the increased cost of fuel.

The inadequate supply of unsuitable wagons prevents otherwise well-equipped collieries from installing loading plants, and colliery owners with loading equipments get no return from same. In many cases expensive loading plants have been erected which due to the Railway facilities being grossly inadequate are not even earning sufficient to pay interest on the Capital expended.

Accumulated stocks hamper outputs and increase loading charges, and in many cases where stocks are kept on the ground for many months deterioration to the extent of 10 per cent. may be expected.

This feature has been rarely evident in the past due to the practice in the Coalfield to maintain a surplus raising to counteract these effects.

It must be pointed out, however, that were adequate arrangements made to remove the output in an economical manner, Re. 1 per ton could be saved in this respect alone.

Over-loading, under-loading and demurrage.—It must also be pointed out, that such iniquitous charges as over-loading and under-loading bills, are entirely due to the want of a standard wagon supply and standard loading rules on the various Railways.

When these penalties were first introduced, it was thought that they were only to be applied as a deterrent against gross abuse. It has been evident from the manner in which the rules have been applied that the Railways have treated this as a source of revenue.

In addition to these charges the manner in which demurrages are incurred, has given my Association grave concern.

In numberless instances, for no reason whatever, Collieries are badly hampered by the unreasonableness of the Railway employees. Railway officers of superior grade seldom, if ever, visit colliery loops and sidings and this results in all power being vested in the hands of the Pilot guards as far as traffic is concerned.

It is extremely tragic, but nevertheless true, that the demurrage rate of a colliery rests on the whim of a Railway under-official who is his own master from the time he leaves the shunting yard until he returns again.

It has been estimated by my Council that by proper consideration of the points brought forward, a minimum saving of from Re. 1.8 to Rs. 2 per ton can be effected before the coal arrives at its destination.

Export coal.—We would further wish to suggest that in order to recover the coal export market, only the best graded fuel be allowed to be exported and this under a certificate from the Coal Superintendent's Department.

In recent years the condition of the coal, despatched from the coalfield has deteriorated due to altered labour conditions and the adoption of a process of fuel grading at the colliery by mechanical means can alone remedy matters.

As pointed out above, many collieries possess grading and loading plants but under present conditions are unable to use them.

Better and quicker transit to the Docks should be arranged. With the inefficient conditions existing at the Docks, my Association does not feel competent enough to express an opinion but it is evident, that where such

antiquated arrangements exist, there must be enormous possibilities for economy.

In conclusion, I would summarise the opinion of my Council as follows:—

- (1) In the actual production of coal little, if any, economy can be effected.
- (2) Plentiful supply of standard open trucks is essential.
- (3) More co-operation on the part of the Railways with the collieries and elimination of iniquitous charges.
- (4) Better arrangements by the Railway Superior officials in order to keep more careful supervision on their subordinate staff when working colliery, loops and sidings.
- (5) Quicker transit to the Docks.
- (6) Better arrangements for dealing with coal at the Docks.

A. FARQUHAR, Esq., President, Association of Colliery Managers in India.

WRITTEN STATEMENT.*

A. Possibility of economies on the coalfields.

General.—The working of collieries should be maintained on more conservative lines under the supervision of only qualified men whose working policy is unhampered by Calcutta Agents. In the past many collieries have been partially ruined and raising costs enormously increased by reckless working under the supervision of unqualified and under-paid staffs. In some cases also, due to the short sighted policy of some Managing Agents, collieries have been seriously damaged by over-production and in many cases during a period of heavy demand the best interests of the colliery have been sacrificed for a temporary advantage. The results of methods like these are now becoming evidence in the increased costs of production and will become more evident in the future.

2. Effect of recent increases in wages.—In 1920 when rates were raised annas two per ton or thereby, there was no justification for such liberal extravagance. Events have not justified the increase as the miner simply maintained his four day a week policy. Now that living has become cheaper for the miner, the margin at his disposal has become greater and idleness more prevalent. It is clear that rates should be reorganised and a substantial reduction of annas two per ton could be effected if Managing Agents could come to a firm agreement about the matter. This can never be effected by individual management. To control this matter and also to provide suitable machinery for future questions of this nature a Wages Board composed of technical and practical men should be set up without delay. This Board should have the full support of the Mining Association and the Mining Federation to enable it to enforce its decisions.

3. Effect of legislation.—With the rigorous application of new legislation, costs will increase and any relief obtained from reduced wages will only be temporary so that a more permanent method of reducing costs must be looked for in the more general utilisation of labour-saving devices both underground and on the surface.

This can only be done if other factors warrant the introduction of expensive machinery on the scale indicated, but if a ready and economical method of loading and transportation could be assured, this matter would be solved by the automatic growth of the industry itself.

* This statement was put in after receipt of the Questionnaire by the Association.

4. Possible savings in stacking charges.—The inadequate supply of wagons together with their unsuitability for coal traffic prevents otherwise well equipped collieries from installing loading plants and owners with loading equipments get no return. In many cases expensive loading plants have been erected which due to transportation facilities being grossly inadequate are not even earning sufficient to pay interest on the capital expended.

Where large stocks have accumulated the average raisings are twenty-five per cent. less than the potential capacity of the colliery. This is caused by the extra time and labour involved in dumping the output and inability to return the tubs to the mines. If stocks were kept clear the maximum raisings would be obtained and a corresponding reduction of costs shown.

5. Wastage from stacking.—Stocks such as have been maintained on the coalfield in recent years deteriorate at the rate of 10 per cent. per year. This has not been evident in the past due to the "making up" process which goes on from surplus raising. The loss is there nevertheless and were stocks maintained clear the surplus would be shown as an asset, swelling despatches instead of balancing depreciation, and thereby saving one rupee per ton.

In maintaining a system like this, extra labour charges are incurred in "dead" work and in many cases heavy costs are incurred in compensating loading-labour during periods when wagon supplies are intermittent and inadequate. With the elimination of the present crude methods of despatching a saving in labour charges of 3 to 6 annas per ton could be obtained.

In fact, the deterioration of stock, the restriction of output and the extra labour charges involved are costing the industry from Rs. 1-8 to Rs. 2 per ton.

B. Possibility of economies in transport to Calcutta.

Such iniquitous charges as Overloading and Underloading Bills which have given grave cause for concern in recent years, are entirely due to the want of a standard wagon supply and standard rules on the various railways. When these penalties were first introduced, it was thought that they were only to be applied as a deterrent against gross abuse. It has been evident from the manner in which the rules have been applied that the railways have treated this as a source of revenue. In addition to these charges, the manner in which demurrages are incurred has given great concern to colliery managements. In numberless instances, collieries are badly hampered by the unreasonableness of the railway employees. Railway officers of superior grades seldom, if ever, visit colliery loops and sidings, and this results in unlimited power being vested in the pilot guards as far as traffic is concerned. It is extremely tragic but nevertheless true, that the demurrage rate of a colliery may rest on the whim of a railway under-official who is his own master from the times he leaves the shunting yard until he returns again.

The remedy for all these defects is, in my opinion, the same, namely, an adequate supply of standard wagons suitable for coal traffic and the loading rules of all railways to be standardized.

In addition to providing a means of despatching coal economically this would also eliminate costs consequent upon overloading, etc.

With the adoption of the remedies which I have advocated above, there is no reason why export coal should not be sent direct in full rakes from the colliery. Certain collieries with the necessary producing capacity should be marked for shipment coal, and weighments made either at colliery or at the docks. This would eliminate the congestion and delay at the present weighbridges, and give a clear run through for shipment coal with advantageous results to exporters as well as to the railways themselves.

Under present circumstances, at central weighbridges wagons are held up for weeks at a time and I venture to suggest that, were this appalling inefficiency remedied by decentralization, the increased earning capacity of a wagon would give a reasonable basis for a reduction of freight.

F. Grading, inspection and certification of coal.

25. Classification into grades.—One of the most important matters which confronts the industry to-day is a thorough reclassification of the Indian coals and the sale of fuel on calorific value and analysis.

Some time in the past, analyses must have been taken and certain seams have been classed as first and others as second. The matter as far as I can judge has now developed into a rule of thumb method and coal is sold as this or the other seam on the basis of a classification which, however accurate it may have been, is now open to doubt in many cases.

I also venture to suggest that in the past the wrong kind of coals have been chosen for bunkering and export to a large extent. A high volatile coal such as the Dishergarh seam is most unsuitable where it has to compete with coals which are fairly high in fixed carbon, and export grades could be more successfully chosen from the Jharia series.

26. Measures to affect grading.—I am thoroughly convinced of the necessity of a Grading or Classification Board free from the control of railway or other official interests. These interests may take the mistaken attitude that the creation of a large export market may tend to maintain the domestic rate, but in my opinion with the creation of an export market sufficient to keep the collieries going at maximum outputs then coal would be produced at the most economical rates with advantageous results to consumers as well as producers.

The Board should consist of expert mining men representing the industry and the certificate of the Board would be a guarantee of uniform quality. The certificate would be based on the calorific value and ash content of the coal.

Sizing of coal.—The sizing of coal is a matter which sooner or later must have the attention which it deserves. To consider this matter, however, before a proper class of mineral truck and better transport facilities have been arranged would be to anticipate events.

With the solution of wagon and transport problems, the question of grading will naturally arise and, when the existence of a colliery depends on the quality of fuel to be put on the market, then there will be no alternative to grading, and this can safely be left in the hands of the industry itself.

As I have already pointed out grading plants are even now in existence on the coalfield; but their economical employment depends on factors beyond the control of colliery managements. When these obstructing factors have been removed, a better class of steam coal will be available for export.

In producing a standard grade of steam coal for export, however, other grades of fuel are also produced and, if grading is to be a success, a demand must be created within the country for the various other grades produced as a by-product.

This is also a question for the Board and it will be their duty to find out the requirements of industrial and other consumers before standard grades are finally decided on.

G. Pooling of coal.

After the thorough reclassification of the various seams, the Grading Board would have an intimate knowledge of the producing capacities of each colliery working seams which fell within the classification for export and bunkers.

I would suggest that the Board in addition to controlling and guaranteeing the standard of the grades should actually receive export and bunker orders and allot them in full or in part amongst the various collieries producing the grades concerned.

This would put the Board in the strong position of enforcing its control. It would also permit of vessels being loaded in the most expeditious manner and increase efficiency all round.

Mr. A. FARQUHAR of Messrs. Mackinnon, Mackenzie and Co.'s
**Bhowra Colliery, President of the Association of Colliery
 Managers in India, and J. T. CALDWELL, Esq., of
 Messrs. Balmer Lawrie's New Birbhoom Bastacolla
 Colliery, Representative of the Associa-
 tion of Colliery Managers in India.**

(Oral Evidence—January 7th, 1925.)

(The evidence was given by Mr. Farquhar except where otherwise stated.)

I have had twenty years mining experience in Scotland, England, America and India, nine years of which have been spent in the latter country.

Mr. Caldwell.—I have had 11 years experience as a Colliery manager in India and 17 years mining experience in England or a total of 28 years experience altogether.

A. Possibility of economies in the coalfields.

General.—*(To Mr. Banerjee.)*—When I say in my written statement that in many cases the interests of the colliery have been sacrificed for temporary advantage, I mean that in the past coal has been got more cheaply than it should have been and great damage has thereby been done to the field, and outcrop workings in particular. This makes it much dearer to produce coal now. There is no remedy for this at the present stage.

(1) Cost of raising coal on Sarkari account.—As regards this I should think that it would be more satisfactory to ask for cost sheets from an average colliery. I have no notes with me of costs but would say the average raising cost in the field would be Rs. 4-8 to Rs. 5 per ton. This does not include Calcutta charges which might reach another Re. 1 per ton.

Almost all the first class collieries are now electrically equipped and in the monsoons power charges alone in some cases approximate Rs. 2 per ton. The average cost for power, however, may be taken at about annas eight per ton.

Rehousing of labour necessitated by the demands of Jharia Mines Board of Health is costing the industry from annas two to annas four per ton according to the condition of the old housing-accommodation on the respective collieries.

European Establishment is responsible for about annas two only per ton.

Stores-cost may run as high as annas eight per ton. These stores consist of miners, tools, explosives, lubricating-oils, timber, etc. I might mention that nearly all the stores are indented for through the Managing Agents in Calcutta: only a minute quantity are purchased locally, and this only with the consent of the Calcutta Agents.

(2) Cost of raising coal on contractors' rates.—The average contractors' rate would run about Rs. 2 per ton for hand-cut coal and may be about Rs. 2-4 for machine-cut coal. The total cost when working with a contractor is the same as when working on Sarkari account.

The average rate for raising may be taken as between Rs. 4-8 and Rs. 5 per ton according to the kind of colliery. I agree that this would leave a fair margin of profit on current prices for the best quality of coals but not for second class coals.

Mr. Caldwell.—There is no margin at all left in second class coal as I can say from personal knowledge. The present prices do not cover raising costs.

(To Mr. Whitworth.)—We could in my opinion reduce these costs if we were assured of an adequate and regular supply of railway wagons by about Rs. 2 per ton but I do not say that this could be done immediately. Once we were assured of the wagon-supply, I certainly think that we could bring down the cost as stated, because we should have an incentive to work up the efficiency of the collieries by recruiting more labour and increasing the output thus reducing the costs enormously. In my opinion although the increased output would probably lead to a slight fall in prices these would not come down below the margin of economical working.

1. **Reduction of cost at pit-head.**—I do not think that we can bring down the costs appreciably unless through increased output. The position at present is that we have restrictions on working, which mean increased costs because, whatever the raisings, overhead charges remain more or less constant: for instance the same establishment must be maintained and we have to spend the same amount on keeping the mines free of water. It has, I admit, been a fairly good year for raisings as compared with previous years, but most of the collieries are working up to 50 to 60 per cent. capacity only, although plant has been installed for the full 100 per cent. which should be obtained. Interest and depreciation charges have to come from this restricted output and costs maintained at a high rate.

There is no contradiction between my advocating the increased use of machinery and the remark in my letter of 1st November 1924, that "due to the more modern equipments which have been installed in the coal fields in recent years—very little economy, if any, can be effected in the actual production of coal at the collieries." What I meant by this remark was that no economies can be effected until we get the facilities for the full utilisation of the labour-saving devices already installed.

As things stand we are ahead of the railway facilities and, until they bring themselves into line, we cannot make full use of our mechanical equipments. The railway situation is at the root of nearly all our difficulties.

It must be remembered that in the past, coal very near the outcrops has been worked. This did not require the same capital outlay and quicker returns were made. The coal under these conditions was recklessly and cheaply worked and now when reserves of this nature are exhausted deeper and more costly mining is resorted to.

(To Mr. Jegge.)—We could certainly increase our output now but we cannot get it away. At present our stocks are practically nil, but we had about sixty thousand tons four months ago at my colliery. Though we have no stocks at present, you must remember we are working at only 60 per cent. of our capacity and the period covered by the last four months represents the best part of the year for coal traffic movement.

(To Mr. Bray.)—When I speak of our total capacity, I mean the total output with which the equipment could deal, were it maintained at full raisings. If we increased our mechanical equipment to deal with more raisings, it might involve labour difficulties to begin with, but if regular outputs were assured new labour would be attracted and maintained. At present it is not worth while to try and find new sources of labour.

(To Mr. Banerjee.)—The introduction of more machinery at the moment would not make for cheapness, because the railway position is so unfavourable. (To Mr. Bray.)—The economies which would result from the introduction of machinery would be due to the increased output that would result. A certain amount of labour would be cut out.

It would not be necessary to supply wagons twice daily to a colliery using a mechanical loading plant if the siding could contain one day's supply. There would be no difficulty about moving the wagons under the mechanical

loading plant, since an up-to-date colliery would find it worth while to put in an electric or steam capstan-winch to move the trucks.

I may say that nearly every mine has a gravity screen which, so far as size is concerned, gives good steam coal. Due however to the type of trucks supplied, little use is got from these screens.

2. **Effect of recent increase in wages.**—Wages in the Jharia field could compare very favourably with the South African level (*i.e.*, Rs. 30 to Rs. 45 a month working 48 hours a week or, at 1s. 4d. per rupee, Rs. 26-10 to Rs. 40 per month) if the men would work 48 hours a week. They do not however.

If a man would work 6 days per week of 8 hours each he could easily make about Rs. 35 to Rs. 40 per month.

The practice however is for the miner to work only three or four days a week, and on the days when he does enter the mine he chooses his own hours, and seldom works effectively for more than four hours. The miner only wants sufficient to meet his primitive wants and in many cases, being an agriculturist, he only comes into the mines to supplement his other earnings.

Mr. Caldwell.—The average miner makes Rs. 4-12 per week and the loader, his wife, Rs. 2-12; but the miner will not often trouble to make more than Rs. 20 per month.

The miner on the average will only work on about 125 days in the year. This allows for his weekly idle days and for his periodical absences at his farm.

Indian labour in India is therefore very much less efficient than in South Africa where the Colliery Authorities must work their labour on more industrial lines. With the large turn-out that they get, I presume more European supervision can also be provided for.

With more efficient labour costs would be reduced. In some respects the present level of wages is certainly too high, when we consider the present social position of the miner. If he could be persuaded to improve his conditions of living, he would gradually become a full-time industrial worker and earn good wages. Many local attempts have been made to create a desire in the miner for a better standard of life with very little success so far.

The Wages Board which I have suggested would be a matter for combination in the whole industry. Individual managers on the coal fields have before now tried to alter the existing state of things and attempted local agreements but without results. Only action by the Mining Association and Mining Federation can solve the problem. I certainly think that such a combination to create a Wages Board is possible. In my opinion circumstances in the near future will force the industry to establish such a Board. It should be constituted of men actually in the coal field who know local conditions. I think the Mining Association and Federation are beginning to realise the fact that success would only be possible if the wages question is managed by the local men with the unflinching support of Calcutta.

(*To Mr. Bray.*)—I believe that all collieries would come in and support a Wages Board. So far as my Association is concerned, I speak with assurance when I say they would support it to a man were we sure that we had Calcutta behind us. The final decision about wages would still rest with Calcutta but the opinion of the people on the coalfield should have careful consideration.

Mr. Caldwell.—I should remark that the last increase was dictated from Calcutta but that was for political reasons.

(*To Mr. Bray.*)—I believe that the decision of such a Board would be effective. I shall quote an instance in support of the opinion. The labour problem in Dishergarh area is more difficult than anywhere else. Recently however, I am informed, the Agents and managers in this field agreed to limit the working days per week in view of the practice of the miners working on an average only three to four days per week. This means that the mines can be shut down for a few days and economies effected in running

charges. My point is that, so far as my information goes, this local agreement has been useful and I presume it was adopted with the approval of Calcutta houses. In the case of a Wages Board, Calcutta could appoint the members and still have control, but the Board would have full authority in the field. How their decision could be made effective is a point that I have not yet fully considered. I should say that the Mining Association's support would be sufficient to make the decisions of the Board effective.

Mr. Caldwell.—It would be difficult but it would be certainly worth trying.

There has been no complaint in the past that the decisions of the Mining Association and the Federation have not been carried out and there is no fear for the future.

Mr. Caldwell.—I agree that the failure of the movement for paying wages by the week in the Raniganj coalfield was due to the defection of managers on the field and not to action in Calcutta. I refer to the attempt made in 1916, the first attempt of this kind. I do not know about the attempt in 1922.

(To Mr. Banerjee.)—In my opinion we can and ought to standardise wages of tindals, hookmen, firemen, etc., on the collieries. We must standardise wages however at rates which would fall into classes commensurate with the degree of responsibility attaching to each class of work.

For example, the rates for enginemen handling direct winders should be on a more liberal scale than the rates for enginemen on geared engines. It will be essential to differentiate between various jobs carrying varying degrees of responsibility. This is where the Wages Board I have advocated would function.

It is not a fact that big collieries pay higher rates of wages unless in cases I have referred to.

Mr. Caldwell.—We fix wages to correspond with responsibilities. The size of the boiler makes the work of the boilermen different.

(To Mr. Bray.)—I do not think that there will be any trouble if we attempt to reduce wages where these are already notoriously high. Machine-cut coal is dearer than hand-cut coal and therefore, in comparison with hand-cut coal, it offers more scope for a reduction of wages. For hand-cut coal the miners are paid 8 to 9 annas per tub and for machine-cut coal, where the labour in getting is 75 per cent. less, 5 to 6 annas are paid. If the reduction is judiciously made, I would not anticipate any labour trouble.

(To Sir R. N. Mookerjee.)—By reducing wages judiciously I mean that we should first tackle labour that is notoriously overpaid. For example, the bulk of machine-cut coal is loaded by female labour and these women must be earning large sums of money which finds its way into the hands of men.

I agree there is no reason for the constitution of a Wages Board to reduce these rates, if the people concerned would agree to do so now, but they will not agree amongst themselves.

Labour loading coking-coal is overpaid in comparison to labour loading steam-coal. The reason I distinguish between the two classes is that coking-coal is loaded "run-of-mine" and steam coal should be free from slack. With the present methods of loading, this cannot be done if similar rates are paid for the two classes of coal.

Mr. Caldwell.—The great trouble is that we are driving the miner to turn loader, because he can get 6 annas for loading a tub of machine-cut coal against 8 annas for cutting with pick one tub and loading same.

My experience of machine-mining in this country shows that the easy work of loading the coal is drawing into the mines new supplies of female labour. Fifty per cent. of our total output is coming from machines and over 30 per cent. of this is being loaded by female labour.

Labour is content now and, apart from the small reductions which could be made here and there, it would probably make for discontent were any

sweeping reductions made. The really important reduction in costs can only be obtained by increased output and better railway facilities.

3. Effect of legislation.—(To Mr. Banerjee.)—If female labour is restricted, labour costs will increase. There would be no increase in the number of male labourers. In fact there would be grave danger of a serious decrease. I must qualify this however by saying that if determined efforts were made now to educate the miners up to the standard of this proposed social reform, then when the restrictions in female labour were enforced the effects on the industry would not be so severely felt.

(To Mr. Whitworth.)—This represents the considered opinion of my Council. We went into the matter very carefully and decided that the proposed elimination of female labour under present circumstances would be such a serious matter that the output of the coal field would be reduced by 50 per cent. and costs correspondingly increased.

We drew the attention of Government to this in our reply to their request for an opinion and we also drew the attention of the Mining Association and Federation to the action we had taken. It was intended to introduce the change in about 4 years time, but, if my information is correct, the matter has been indefinitely postponed.

5. Wastage from stacking.—By the making up process I refer to the custom of colliery managers to safe-guard themselves by producing 10 per cent. surplus. The reason for this is that some Calcutta Houses will not allow for wastage. Some firms do recognise this depreciation, and on this account where stocks accumulate they transfer a certain amount from the head "Steam" to the head "Slack"; but on most collieries reliance must be placed on the extra raising which is not reported until it is called in to cover depreciation due to stacking.

(To Mr. Banerjee.)—The average deterioration on stocks would be 10 per cent. and taking coal at Rs. 10 per ton, this represents a loss of Re. 1 per ton per year. The difference between this and Rs. 2 as stated in my written evidence is made up of the extra cost in loading charges, damage to tubs due to dumping, additional labour charges and materials for tram-line tracks, and also loss of output.

B. Possibilities of economies in transport to Calcutta.

During recent months there has been a marked improvement in wagon supplies. At the moment we are experiencing no difficulties about wagon supplies. We have passed through the season when trucks are always more plentiful and are coming to the time when they will be scarce.

I expect a shortage of trucks in the next few months, but on the whole the position has been better this year than during recent years.

As regards underloading Bills; there are many different types of wagons with different loading capacities and covered by different rules. Three load-lines may be found on the same wagon and each may be correct or incorrect. Shippers are penalised if wagons are overloaded and penalised in another manner if the wagons are under loaded.

Loading rules are not the same for each railway and trucks may be loaded correctly for one railway only to find that this railway being unable to take the traffic transfers part to the other line, the result being that despatchers are completely mystified and heavily penalised.

Mr. Caldwell.—We should have wagons which can be flush-loaded.

(To Mr. Whitworth.)—I made tests five or six years ago to find the volume per ton of various seams. I found that the results did not agree with the railway figure of 42 cubic feet to the ton. There was a variation due to the differences in specific gravity.

Mr. Caldwell.—The statistics as collected by the Colliery Managers Association gave a result which showed that the average was not quite 41 cubic feet per ton.

It would be no solution if each colliery marked its own line, as this would make matters still more confusing. There are variations between the wet season and the dry which are so marked that other subsidiary factors do not matter. In the monsoon, with some types of wagons, it is possible for a wagon to leave the colliery underloaded and reach the weighbridge grossly overloaded with water. There are variations also due to the size of the coal loaded.

Mr. Caldwell.—The size of the coal is important. The coal in the solid is about 27 cubic feet per ton while slack or dust will be 44 cubic feet. Machine-cut coal is in big lumps and about 41 cubic feet to the ton and there is a tendency to overload it.

(To Mr. Legge.)—I am not aware whether the decision arrived at by the Coal Conference of 1912 is still in force. I was not in India at that time.

There are changes continually being made in the carrying capacities of the trucks and as soon as we become accustomed to a particular type of truck, the load line is again changed. The rules made by the railways governing loading are changed from time to time. As regards the mark showing 42 cubic feet to the ton the specific gravity of the coal varies a great deal. The load line is useless. I have had wagons loaded to the railway marks and yet penalised for overloading and sometimes for underloading. Therefore I advocate standard open trucks with flush line loading.

The loading standards for the East Indian Railway are not the same as for the Bengal Nagpur Railway. The loading rules vary by two tons per truck and in some types more. I do not agree that the differences are necessary to secure a safety factor for axles. If it is safe for one railway then it is safe for another. My reason for saying this is, that the railways are not consistent. We requested the East Indian Railway on one occasion to increase the axle-load on a certain type of truck, but they could not do this on account of the safety factor. Two years later for no obvious reason the axle load was increased from 14 tons to 16 tons.

Mr. Caldwell.—Sometimes a wagon is loaded for a certain destination and loaded correctly for a certain route. The railway may send it by another route and so causes the wagon to be either overloaded or underloaded, as the case may be, *i.e.*, whether the new route allows loads less or greater than the route intended.

The remedy is to have a weighbridge at each large colliery. The number of weighbridges on the field is limited to about four in Jharia. When wagons are sent from the mines, they are held up at these bridges and I have known cases in which exchange wagons between Pathardih and Bhojudih were held up about four weeks. Usually the wagon-weighments would be a full week behind. Railway people declare that overloading is the cause of this congestion and that the wagons are detained for adjustment. In addition to this too many wagons have to pass through one weighing machine and decentralisation is called for.

Mr. Caldwell.—In my opinion shipment coal ought to be weighed at the docks, but if we had wagons for flush-loading there would be no need for weighing all of them.

(To Mr. Banerjee.)—As regards having weighbridges at each colliery I mean that any large colliery which can ship a rake or half-rake at a time should have its own weighbridge, the expense of installation and upkeep being paid jointly by the colliery and the railway.

(To Mr. Whitworth.)—I do not think that the expense need be very large and the relief in congestion would far outbalance any expenditure that was necessary. The erection of quarters for the staff working the bridges would not be necessary on most large working collieries because quarters would easily be found.

Such weighbridges would eliminate many difficulties but there are many collieries where a bridge could not be economically installed. At Bhowra.

where many sidings exist a weighbridge could be arranged to deal with all of them if it was placed at a convergent point.

The pilot would have to shunt the trucks over the weighbridge. This would be possible because it takes one pilot to work the sidings at present and he might just as well occupy his time in useful work rather than spend it waiting for the Bhojudih yard to become less congested. At present the pilot does effective work for about 25 per cent. of his time only.

(To Mr. Whitworth.)—A loading line is of no use and the only remedy is standard open trucks with flush line loading. There is a certain number of open wagons now, but the irregularity of supply prevents full advantages being taken of them for screen-loading.

For example one large colliery with a modern plant shows the following record since the plant started:—

	Per cent.
Open wagons supplied	50
Closed wagons	50
Wagons loaded at screens	25

Other 25 per cent. of the wagons might have been loaded at screens but on some days supplies were not made and the coal was dumped on the ground. Some days double supplies were made to make up for days on which no supplies were given. Irregularities like these prevented the full use being made of the plant.

In the old days when I first came to this country, superior officials used occasionally to visit the sidings to see what was going on. Now they seldom do so, and men on very low salaries are left to make the arrangements. Advantage is taken in many cases of the powers entrusted to them and coal companies are seriously hampered in their operations. There is no redress as a rule for the colliery as the railway superior officials will only accept the report of the pilot made through the yard master.

(To Mr. Bray.)—It would help if the railway superior officials would come round the sidings more and see things for themselves when they were not expected.

(To Mr. Legge.)—I agree that demurrage is charged by the railway if a pilot guard leaves wagons in the siding on a false pretext that they are not ready when he arrives. It simply amounts to a dispute between the pilot guard and the colliery staff, but it is not correct to say that we accept the version of one while the railway accepts that of the other. We have both sides of the dispute (and often see the actual incidents) and reach a decision on the merits of the case. The railway officials do not do this. They first send the Bills based on the report of the pilot guard through the yard master. On representations being made by the colliery, the manager is informed that an enquiry has been made and he is responsible. The enquiry, if any, probably consisted of a cross-examination of the pilot and the yard master and no opportunity was provided for colliery witnesses to give evidence.

(To Mr. Banerjee.)—The railways have the following very guilty habit. A manager indents for a particular destination and routes and the railway supplies wagons that should not go to this destination or by this route. This is an error on the part of the railway. If through an oversight the colliery people load these wagons they must be transhipped at the central weighbridge yard and transhipment charges are debited against the colliery.

If the railways omit to do this (which they often do) and allow the wagons to pass through this is a greater error on their part and leave charges are incurred, which are again debited to the colliery.

In a case like this I have had as much as Rs. 154 to pay for a single truck. My point is that the railways make the mistakes and should not charge the collieries.

F. Grading, inspection and certification of coal.

I have made some remarks on this in my written statement, but I should not like to answer any questions on it, because I consider it is a matter which should be left in the hands of the Mining Association and Federation.

(*To Mr. Banerjee.*)—When I remark that the wrong coal has been chosen for bunkering and export in my reply to question 25, I mean that you must send out a coal as good as South African coal.

My belief is that on an average we have as good coal on the Jharia field as they have in South Africa.

I consider Dishergarh coal a first class coal under certain conditions, but not as a navigation coal. It may be useful as a steam coal on land where all sorts of devices ensuring economy can be installed. It is a highly volatile coal and 30 per cent. of it would go up the funnel.

**J. R. HARRISON, Esq., Colliery Superintendent, G. I. P., B., B.
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WRITTEN STATEMENT.

A. Possibility of economies on the coalfields.

1. Reduction in cost at pit-head.—An appreciable reduction in the cost of coal at the colliery could be brought about by reducing the wages paid to labour.

It is, however, impossible to standardise wages owing to the diversity of conditions obtaining at different collieries. At some collieries coal is easily won, especially in the shallower mines; at others, conditions are more difficult and naturally the coal cutter demands a higher rate of pay. The governing factors are locality, depth, inclination, water and ventilation.

Coal of first class quality, produced at the shallower mines, could be sold at remarkably low prices as it is obvious that the cost of production does not depend on whether the coal is of first class or second class quality but on the difficulties to be overcome in winning the coal.

Consideration may be given to the following:—

- (a) Miners wages.
- (b) Increase in the output at collieries working first class coal. To effect this machine-mining may be introduced where the labour cannot be relied upon.
- (c) Sufficient wagon supply at regular timings.
- (d) Improvement in underground conditions: ventilation, transport and compulsory shifts.

2. Effect of recent increase in wages.—It is common knowledge that recent increases in wages have raised the cost of production of about 5 annas per ton.

In 1920 owing to the increased demand for coal, labour shortage, and general discontent amongst miners, increased rates of pay were given to encourage labour and make the work more attractive.

This unfortunately proved a failure as the miners are now content to work three or four days per week at the higher rate, instead of having to work five and a half days to earn a livelihood. More miners and extra housing are consequently required to give the same output. There is moreover a greater tendency to irregular working.

3. Effect of legislation.—During the past few years the effect of the legislation has undoubtedly increased the cost of production, but as the introduction has been so gradual I am unable to give any figures.

The proposal to abolish women labour underground will undoubtedly cause great discontent amongst the labour accompanied by a falling off in output and increased cost of production.

Better housing accommodation and sanitary arrangements were undoubtedly essential.

4. Possible saving in stacking charges.—The cost of stacking varies from annas 2 to annas 4 per ton.

Improvement in stacking accommodation at many collieries would, to a small extent, effect a saving, but a regular wagon supply at fixed timings would of course practically eliminate stacking altogether.

In Jharia and Raniganj, however, it is nearly impossible under present conditions for the railways to do more than they are doing, as there are so many sidings to be served on each colliery, or to each small colliery any appreciable improvement would have to come from speeding up during transit.

In comparison with the coalfields of other countries, I consider Indian railways give many more facilities. Instead of collieries having to haul coal to a central siding, the railway is actually hauling coal from the various sidings over the property itself.

Again many of the properties are so small, and require a siding for one mine which is only raising 2,000 to 4,000 tons per month.

The above is emphasized by the fact that in South Africa 77 collieries are producing 12 million tons per annum (an average of 13,000 per colliery per month) whereas in India in 1923 there were about 900 collieries in Jharia and Raniganj only producing about 18 million tons (under 2,000 tons per colliery per month).

5. Wastage from stacking.—When collieries carry large stock there is a gradual disintegration from "round" coal to "slack" resulting in the depreciation of the value of the stock. The longer the coal remains in stock, the greater the wastage.

It is therefore very difficult to give figures covering all conditions.

The actual figures taken from a colliery carrying a stock varying from 3,000 to 10,000 tons per month work out at 5 per cent. Instances, however, are known where the shortage has amounted to 25 per cent.

B. Possibility of economies in transport to Calcutta.

3. (a) Improvements in wagon supply.—I consider very little can be done to improve the distribution and despatch of wagons (*vide* reply to 4).

Several collieries have, however, endeavoured to centralize and load at one common siding, but I am doubtful whether many others are in a position to do this, as at most collieries the lay-out is final and the cost of making any change would be prohibitive.

(b) Their influence on costs.—Any improvement in the distribution, loading and despatch, and regular wagon supply would reduce the cost at the pit mouth. A quicker turn-round of wagons would moreover mean a saving to the railway company.

The system of loading wagons to a line demarcated by the owning railway, which is supposed to represent the carrying capacity is very misleading. Some of the wagons do not carry this line and with others the line is incorrectly placed. It is understood that this loading line is based on the assumption that a ton of coal occupies a space of 42 cubic feet. The figures given below from actual tests recently made show how the weight varies, bulk for bulk different classes of coal:—

(a) Colliery working "Selected" Jharia Coal.—Three separate tests worked out at 44·60, 43·30 and 43·30 cubic feet to the ton.

(b) Colliery working good 2nd class Jharia Coal.—Three separate tests worked out at 44·60, 44·80 and 44·60 cubic feet to the ton.

(c) Colliery working the "*Dishergarh*" Seam.—Three separate tests worked out at 48.50, 47.21 and 47.92 cubic feet to the ton.

It may be pointed out that whilst these tests were being made the opportunity was taken of checking the "Tare" weight of two railway wagons with the following results:—

Marked Tare.	Actual Tare.
Ton. Cwt.	Ton. Cwt.

Type O. H. C.

(a) N. W. Railway wagon No. 18321	8 19	8 9
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Type K. G.

(b) N. W. Railway wagon No. 14203	8 17	8 12
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The only solution is for each colliery to calculate the space occupied by a ton of the coal they are loading or the provision of open-type wagons which could be "Flush" loaded.

7. **Type of wagons.**—Open-type wagons would, in the long run, prove to be the more suitable as they are better suited for mechanical loading and unloading.

With the present arrangements for loading at the majority of collieries and for shipping coal at Calcutta, it is immaterial whether open or covered wagons are employed: in fact, a mixed supply reduces congestion at the docks and is more suitable for dealing with the return traffic from the docks.

8. **Railway freight.**—This is for the railway companies to decide. A reduction in freight, to anything approaching pre-war rates, would enable certain collieries to compete with foreign markets and give considerable impetus both to export and bunker trade.

9. **Work of Coal Transportation Officer.**—I do not consider the work of the Coal Transportation Officer in any way to have facilitated, and moreover, I do not see how this work can facilitate the trade in export and bunker coal. The work, as in pre-war days, could be absorbed by the respective railways.

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E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—I have had no experience with the actual burning of South African, Japanese and Australian coals, but I am aware that there are certain Indian coals which can compete with the coals exported from South Africa, Japan and Australia.

The chief factors determining the quality are:—

- (a) Calorific value.
- (b) Percentage of ash, volatiles and carbon.
- (c) Hardness or friability.

First class Indian coals run as high as 7,600 calories and carry an ash percentage varying from 9 per cent. to 13 per cent.

There is very little difference in hardness between South African and Jharias.

The average analysis of Transvaal coal taken from ten collieries is given below:—

Moisture.	Volatile matter.	Fixed carbon.	Ash.	Sulphur.	Calories.
1.08	24.55	59.67	13.47	1.23	12.92

The analysis of Natal coal are seen from the following table:—

No.	Moisture.	Ash.	Volatile matter.	Fixed carbon.	Sulphur.	Sulphur in ash.	Calorific value.
1	1.88	12.84	17.01	69.27	1.83	..	14.16
2	2.9	13.84	24.98	58.88	1.52	..	13.73
3	1.90	9.68	25.16	62.46	1.76	0.15	13.82
4	1.3	10.72	18.30	71.25	1.25	0.07	14.25
5	1.28	12.92	23.7	62.1	1.68	0.16	13.73
6	1.38	12.28	17.2	69.27	1.89	0.16	13.98
7	2.25	11.28	18.74	68.73	1.34	0.33	13.83
8	1.9	12.73	17.5	68.87	1.65	0.2	13.75
9	1.35	12.59	16.61	69.45	1.53	0.13	13.83
10	1.2	13.44	15.1	70.44	2.55	0.25	13.65
11	1.61	12.84	18.35	68.20	1.59	0.16	13.75
12	1.4	15.3	16.1	67.56	1.13	0.16	13.33
13	1.72	11.38	19.6	68.84	2.26	0.28	14.25
14	1.04	13.94	16.18	68.84	2.21	0.9	13.65
15	1.34	11.18	2.74	68.74	1.75	0.8	14.43
16	1.33	13.6	18.56	67.52	1.76	0.15	13.75

21. **How competition can be met.**—(a) Exporting coals of the very best quality. Some of the coals shipped in the past have been merely of a second class nature.

(b) A reduction in railway freight.

(c) A reduction in the cost of production.

(d) A reduction in the selling price at collieries where coal is easily won.

(e) Giving more attention to sizing and picking. In South Africa, special attention is given to the sorting and sizing of the fuel. The loading at each colliery is centralised and screens with adequate picking-belts are more the rule than the exception. With Indian collieries the reverse is the case and as pointed out in reply to question 6 (a) centralisation, mechanical loading and screening even at first class collieries could not be introduced except in a few cases without extensive alterations involving considerable capital expenditure.

22. **Possibility of new overseas markets.**—For the present the work of export should be confined to regaining the markets previously held.

23. **Special assistance to other coals competing with Indian.**—I understand special concessions in railway freight are given by the Government of South Africa for export coal.

F. Grading, inspection and certification of coal.

24. **Grading of coal.**—I am in favour of grading coal for export.

25. **Classification into grades.**—I can indicate the different grades into which I consider Indian coals should be classified. This can be done by one who is technically acquainted with each coal seam and the colliery at which the seam is worked together with a knowledge of the work to which these coals are suited.

Many of the coal firms have this knowledge and are in a position to advise purchasers on the class of coal suitable for their requirements.

Many big purchasers also have this knowledge.

If foreign markets are to be regained it is in the hands of the Coal Trade to supply the coal which they know from experience can compete in quality and price with coals other than Indian.

I could prepare a list of collieries producing the very best of Indian coals, of a quality well able to compete with other foreign coals, but, as mentioned above, it would be necessary to specify the seam and the colliery where it is worked because there is a great variation in the quality of the same seam occurring in different localities.

26. Measures to effect grading.—This should be brought about by a Grading Board.

27. Control of grading.—Grading should be controlled by a non-official Grading Board.

28. (a) Inspection and certification.—If the coal companies can be relied upon to supply the coal contracted for, and as specified on the Grading List, no inspection is needed. A certificate of grade can be given by the Grading Board.

29. Compulsory versus voluntary grading.—I am opposed to powers being taken by law to enforce grading.

30. Meeting of cost of grading and inspection.—If the trade consider that inspection is desirable, it would be necessary to have inspectors on the coal-fields and a supervisor at the docks. The cost would be met by the payment of a small fee per ton on coal shipped.

31. Sale on analysis.—This would be impracticable.

G. Pooling of coal.

32. Practicability of pooling and its effects.—A general pooling of coal either for export or bunkering is impracticable.

34. Compulsory pooling.—It is impracticable and undesirable.

(Oral evidence—February 24th, 1925.)

General.—I have had 11 years mining experience in India, 1½ years in the Jharia coalfield and the rest on railway collieries. I acted for the Chief Mining Engineer, Railway Board, from July to November last year. I am Colliery Superintendent for the G. I. P., B., B. and C. I. and M. and S. M. Railway collieries. There are 3 collieries under me, the output from which is 600,000 tons a year. All of this comes from one colliery, Kargali. Of the others one is developed but not able to despatch coal owing to railway connection not being complete and the other is in the early stage of development. The two collieries on the Ramgarh-Bokaro field are as follows:—

(1) Kargali, G. I. P. Railway Colliery.—This is despatching coal.

(2) Jarandih Colliery.—The joint colliery of the B., B. and C. I. and the M. and S. M. Railways. It has two shafts 900 feet deep and two inclines but is waiting until a bridge has been constructed before coal can be got away.

In the Karanpura field we have Religara-Dari colliery, belonging to the B., B. and C. I. and M. and S. M. Railways, which is also waiting for railway connections.

A. Possibility of economies on the coalfields.

1. Reduction in cost at pit-head.—The average cost of raising at Kargali colliery is Rs. 3 a ton inclusive of 8 annas as royalty. This also includes the cost of paying for working of the weighbridge, upkeep of siding and for the staff provided by the B.-N. Railway for Amlo Block Hut. This you can hardly compare with the costs at Giridih where, with deep pits

working first class coal, the raising cost comes to about Rs. 4-8. Some of Tata's pits in the Jharia fields produce at a cost, excluding overhead charges, of less than Rs. 5: these collieries are equipped with mechanical coal cutters, etc. I have a knowledge of the conditions in the Jharia coalfields having worked there for two years while I was with Tatas from 1914 to 1916 and afterwards with the State Railways' Inspection Department until 1918.

We have especially favourable circumstances at Kargali as regards keeping our costs down, because we are doing mostly quarry work in a seam 75 feet thick. The conditions at Giridih are practically the same as in some pits at Jharia. The difference is that at Giridih a different system of working was introduced years ago when experts brought out from the South Staffordshire coalfields introduced the South Staffordshire method of working. The costs at Giridih, excluding royalties but including everything else and also including heavy road-cess, work out to about Rs. 4-8 a ton on the latest figures. If an allowance is added for royalty charges, the cost will practically come to Rs. 5. Of course, when comparing this with Raniganj figures, it must be remembered that mining in Raniganj is more difficult and labour there is scarce. At Kargali Colliery we pay for sinking fund 3 annas per ton; for road-cess 2 annas and for royalty 8 annas. The actual cost paid to the contractor is Rs. 1-7-9, but that includes the cost of taking off 15 feet of overburden. For raising coal at the pits at Kargali the amount paid to our contractor is Rs. 1-14 per ton.

As regards miners' wages, I should advocate a reduction if each colliery could manage it.

I agree that when cutting machines are used the cost per ton is no cheaper than when the coal is worked by hand; but there is a saving on overhead costs with the increased output.

(*To Mr. Stuart-Williams.*)—I certainly think that the South Staffordshire system of working is more economical where it can be introduced. They pride themselves at Giridih on having a good roof, but many collieries in the Jharia field have a roof which would permit of the same system being introduced. However, the whole method of working cannot be suddenly changed in a mine. It is a matter of gradual development over 10 or 15 years. I do not say that the Staffordshire system of working could now be introduced into the Jharia mines in place of their present system.

(*To Mr. Legge.*)—I regard regularity in the supply of wagons as very important, in fact as most essential, quite apart from the question of sufficiency of wagons. In many Jharia collieries, if the wagons are not placed within three hours of the proper timing, the labour return to their houses. I agree that it is better to have a smaller supply at regular hours than to have slightly more wagons at irregular times.

At our Jarangdih Colliery we intend to put in a siding with a loop for receiving and another siding for weighment and despatch. The pilot will bring 50 empty wagons on to the loop, leave them there, go back along the other side of the loop and pick up the loads out of the despatch siding. Our own locomotive takes the empties left by the pilot engine in the loop and places them where they are required for loading, either at the mechanical loading plant or alongside the loading platform. As the wagons are loaded at the screens, or at the loading platform, they are drawn forward, and pushed back across the weighbridge from whence they gravitate into the despatch siding. The empties may come at any time convenient to the railways. We have room in which to leave them standing until we want them. With a system like this one avoids all the trouble due to getting wagons at irregular hours. A yard such as I have described will cost about Rs. 2 lakhs and the colliery must have its own locomotive. At Kargali we work the yard with two of our own locomotives. An engine in a big colliery yard is essential. You cannot possibly keep one of the railway locomotives waiting while you place the wagons and sort them according to the coal which you want to load them with. I do not say that it would be possible to alter the existing sidings in Jharia so as to allow a system of

this kind to be introduced. It would be a terrible business to alter the lay-out of a number of the big Jharia collieries. In fact it would be out of the question when one considers that it would mean locking up more coal. The collieries have not got the room for expansion: the siding which I have described has a 3,000 feet run. I put in a plan of the Jarangdih Colliery Siding.

(This plan has been attached to the report.)

4. Possible saving in stacking charges.—It is not a fact that at our collieries we are able to avoid stacking. I have been carrying for the last year 10,000 tons of coal in stack at one colliery. The reason for this is—

- (1) Want of wagons.
- (2) Want of siding accommodation, and
- (3) Lately the inability of the G. I. P. Railway to take the whole output in addition to their outside purchases.

Wagons are supplied by both the B.-N. and E. I. Railways.

If we could avoid stacking, we should save a minimum of 4 annas a ton, i.e., on the actual cost of extra labour for stacking. To say what the deterioration would amount to is difficult: it depends on the size of the stack and the time the coal is left in it. At some collieries, I agree, the deterioration probably would amount to Re. 1 per ton. There is the cost of bringing the coal from the pit, over a lead of 400 feet, and then when wagons do become available, the coal has to be carried back again 400 feet to the loading wharf. If you take a colliery like Bausjora, which is now carrying 150,000 tons, you might say that their loss amounts easily to Re. 3 per ton, not to mention the danger of fire which would mean complete loss.

B. Possibility of economies in transport to Calcutta.

8. (a) Improvements in wagon supply.—I have here a map which may interest the Committee showing the various collieries on the Jharia field and the seams so far as they can be traced. You will see that seams 11 and 12 join at the Jharia end and then, as one seam, joint up with No. 13 seam at Bhulanbararee. This will show how difficult it is to define seams for the purpose of grading coal. Incidentally it will be seen from the map that the properties at Kirkend are of the wrong size and shape: this makes the provision of sidings extremely difficult and it is a wonder that the railways have been able to arrange for them. It is the same at the other end of the field at Tisra, where the railways have managed more or less to give each colliery a separate siding. My map does not include the Golukdih siding and so is not quite up to date. I prepared it when I was working on the Jharia field.

(To Mr. Bray.)—15 seam is of fairly uniform quality but taking the seams generally the east end of the Jharia field is the area containing the good coal. This coal is, in my opinion, the only coal to compete with South African coal apart from a mixture with the Dishergarh-Poniata quality. Coal from 17 seam is suitable for export, and 18 seam also if you keep to the correct section.

(To Mr. Legge.)—I cannot say exactly what percentage of the total number of wagons allotted to the coalfields goes to coal purchased by the Chief Mining Engineer. It may be as much as 45 per cent. as stated by Mr. Legge. When the new Railway Collieries come into bearing, we shall certainly want fewer wagons for railway coal on the Jharia field.

We shall not be self-supporting even when our collieries are fully developed. They will be able to provide for not more than about half our requirements. At present we take about 6 million tons of coal from the market and you may put the maximum outturn of our collieries as likely to be about four million tons a year. Apart from that, the coal in certain parts of Jharia is a better class coal than we have in some of our new collieries and the railways must continue to buy a certain quantity at any rate of this superior coal.

To Mr. Banerjee.)—I do not agree that there will necessarily be an increase in the total amount of coal used by the railways. The G. I. P. Railway have this year reduced their consumption of coal by 20,000 tons a month. I do not see much chance of increase during the next 5 years. The G. I. P. Railway who used to take 90,000 tons a month now only take 70,000 and their requirements are likely to be still further reduced as their schemes for electrification progress.

The trouble when we have developed our Railway Collieries will be to dispose of the Jharia coal, especially that coming from the poorer collieries. If they find an equivalent market elsewhere, we shall still be in the same difficulty as we are now regarding wagon supply. In favour of some of the Jharia mines is the fact that their quality will still be better than that of the greater portion of the output on the Ramgarh-Bokaro and Karanpura fields. The development of these fields will be slow and as they develop the railways will be able concurrently to improve their facilities. So the requirements of these fields will not react injuriously on the wagon supply of Jharia. The difficulty with the Jharia field is the mass of small sidings which upsets any system of timing supplies.

(To Mr. Stuart-Williams.)—At all our new collieries we shall certainly put in mechanical screens if the B.-N. Railway will guarantee a regular supply of open wagons. We should have screens to give four kinds of coal—steam-coal, rubble, smithy and dust. This would certainly be an economy if we can get the necessary wagons, but it would be no good spending the money if the wagon supply is not assured. The wagons would have to be open wagons. They are putting in screens and a plant for loading covered wagons at Tata's Jamadhoba Colliery. This is a very big equipment and expensive and I should not recommend it for every colliery.

(To Mr. Legge.)—I think that it would be out of the question to improve the regular distribution of wagons on the Jharia field, because the collieries are so congested. It might be some help to send out the pilots earlier than at present but the difficulty arises in splitting up the trains so as to serve the various sidings.

6. (b) **Their influence on costs.**—*(To Mr. Banerjee.)*—I do not want a load-line. It is up to each colliery to calculate the number of cubic feet of coal to a ton, to supervise at the loading depôt and see that each wagon is loaded up to the proper height for the coal of that particular colliery. The load-line is said by the railways to be only a guide: and it is only a guide and a very rough guide at that. At Kargali if we load up to the line we overload by two tons. Our Kargali coal is of the same specific gravity as good second class Jharia. I have given the weights bulk for bulk in my written reply.

They have no such trouble at the collieries in the United Kingdom where they load the wagons up to the top and leave it at that. I do not see why the railways worry so much about axle loads: many of the wagons have their tare wrongly shown and must I think be carrying far more than is allowed by the rules. I doubt if the risk which would be involved would be serious enough to justify the elaborate precautions now taken. I think that a wagon could be loaded two or three tons more than it is allowed to be, because many of them are now, owing to the mistakes in the tare-weights. I do not know why the railways insist on the margin at present allowed, but I cannot think that it is due to any consideration for the safety of the wagons. *(To Mr. Banerjee.)*—To reduce the carrying capacity of each wagon by one ton would not be of any assistance: it would come to the same thing as at present and less coal would be got away. The real solution is to load flush and charge actual weights. *(To Mr. Stuart-Williams.)*—They always weigh wagons in the United Kingdom.

E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—There are coals giving 7,600 calories on both the Raniganj and Jharia fields. It is a curious fact that some of our

second-class coals are very high in calorific value—equal to what we call first class coal. The reason why they are classed as second-class is on account of the large percentage of ash that they contain.

The washing of Indian coal is impossible. About thirteen years ago the Tata Iron and Steel Works had a number of experiments made, sending coal to Germany, America and the United Kingdom for the purpose. The result was to prove that washing is impossible. The reason is that the shale is so coalesced with the coal that the two cannot be separated by washing; in many cases Indian coal is very bad in quality and there is little difference in specific gravity between the "coal" and "shale." It is hard to say when this "coal" ceases to be coal because so many contrivances have now been introduced for making inferior coal or even carbonaceous shale useful. Many coals are despatched in India containing 30 per cent. of ash. Whether you count anything as being a coal or not depends I should say on the amount of carbonaceous matter in it. (*To Mr. Stuart-Williams.*)—With certain seams of Indian coal the large lumps are regarded with suspicion as they often contain so much shale and nodules of foreign matter. Tata's Steel Works found that the very best coal was the friable coal which went to dust easily.

F. Grading, inspection and certification of coal.

28. Inspection and certification.—The Chief Mining Engineer buys about 6 million tons of coal in the open market which is subject to inspection. The staff dealing with this work is as follows:—

There is a Coal Superintendent with Headquarters at Dhanbad who deals with wagon supply and who receives from the Locomotive Superintendents of the various railways statements of their requirements from month to month. Subordinate to him there are five Assistant Coal Superintendents of whom two are in the Jharia field, and three on the Raniganj field, and besides there is one at the docks who works directly under the Chief Mining Engineer. The pay of these officers starts at Rs. 700. They are all colliery managers holding colliery managers' certificates. The staff does not inspect all the 6 million tons, but they visit the collieries which supply coal to railways, inspect the loading and advise and exercise a general check. The Assistant Coal Superintendents do the actual work of inspecting on the collieries. When they see coal being loaded for a railway, they cannot definitely tell you how much ash is being sent away in the coal, but they have a very good idea. It would be difficult to say what proportion of the total despatches they actually inspect before the coal is despatched. They do not profess to look at every individual wagon.

The rule used to be that every colliery supplying the railways with coal on the Jharia, Sijua or Raniganj field should be inspected several times a month. The inspecting officers have power to reject coal that is unsuitable, i.e., they can advise the manager to stop the loading of such coal, but once a wagon is loaded, they have no power to stop its despatch. I consider the system of inspection effective in that it keeps the quality of the coal up to standard.

(*Mr. Stuart-Williams.*)—I may mention that the Port Commissioners have had their coal inspected for years and I have not known of any complaints. I regard the system as satisfactory so far.)

All shipment coal and not only a percentage of it is inspected at the docks and a report is prepared on each cargo sent out.

(*To Mr. Bray.*)—The Assistant coal Superintendents inspect more than once a month at some of the collieries. How often depends on the orders placed. At some collieries there is daily inspection.

(*To Mr. Legge.*)—The system is one of surprise check. But as regards the inspection at the docks, the Assistant Superintendent looks at the contents of each wagon. If the coal is unsatisfactory, a complaint is made and there is a reduction enforced on the price. The inspection at the colliery

is a surprise check only, but the inspection of the coal at the docks is detailed.

(*To Sir R. N. Mookerjee.*)—When coal is despatched by rail, we advise the recipient to inspect again any wagon of which the Assistant Superintendent was doubtful, and, if after such inspection the coal is bad, the price is cut or delivery refused altogether.

(*To the President.*)—If the Chief Mining Engineer certified coal for export, his staff would be able to guarantee the seam and the colliery from which each consignment came. An officer would go to the colliery and note the seam and note whether the coal that was being loaded was coming from that seam. The Chief Mining Engineer's staff would have to be informed when coal was going to be despatched for shipment from any colliery. This scheme would be workable. In fact it is the scheme now in force for railway sea-borne coal, *e.g.*, for the Burma railways and the Madras railways. Every wagon-load despatched for such railways is not inspected at the collieries. With additional men the present staff would be able to manage the whole of the inspection export coal.

(*To Mr. Legge.*)—By this I do not mean that they would watch the whole process of loading but they would do a general check.

The trouble would be with a colliery loading from the wrong pit or incline. If at the colliery you stop the despatch of wagons loaded with the wrong coal the clearing of the siding would be interfered with, and that might hold up the ship; on the other hand, if the coal went down to the docks, the difficulty would be in arranging for its disposal.

(*To Mr. Stuart-Williams.*)—The inspection must necessarily be very strict. A buyer at Singapore, for instance, wants to get the coal he has contracted for and not an inferior coal. If certain firms insisted on loading bad coals the difficulty would be that the railway would draw out the wagons. It might be made a rule that the inspecting officers could order a wagon to be emptied if the coal in it was unsatisfactory; but then the colliery would have to pay demurrage to the railway, which is a serious matter. I agree that if we introduce drastic inspection at the colliery, we cannot have another drastic inspection of the same wagons at the docks. It would be unfair to reject at the docks, wagons which had been passed at the collieries. The ideal would be to have men on the coalfields who would see the incline or pit from which the coal is coming and give a certificate accordingly; there would be another man at the docks to see that the right coal is loaded on board.

(*To Mr. Legge.*)—Night loading would not be a difficulty. Very little of it is done. The number of officers required for inspection in order to be certain of having adequate check depends on how much the trade is prepared to pay. I certainly think that an inspection of a proportion of the coal despatched amounts to a check on the whole consignment. But if the trade pay one anna per ton, the amount collected would be ample to pay for detailed check assuming that 1,600,000 tons of coal were exported.

(*To Mr. Bunerjee.*)—Of course, we reject tenders from collieries which we have found by experience loaded bad coal. The fact that they were unable to load good coal proves that they cannot supply coal of the right quality. This practice does not do away with the need for inspection, because even a first class colliery might export second class coal if it were not supervised: as regards "continuous" inspection it is all a matter of degree.

If the supplier wishes to mix the coal at the docks he can do it provided the same quality of coal is obtainable. It is Hobson's choice: the boat must be got away. Whether the seller can finish loading with someone else's coal if his own coal has not come down to the docks in time is a point which he would have to settle with the buyer. I do not think this will happen often.

(*To Mr. Bray.*)—If the coal is graded according to the colliery and the seam, there should be no difficulty in carrying out an adequate inspection.

but I think that the staff of the Chief Mining Engineer would have to be increased. One extra man in each district might be needed. A charge of one anna per ton on export coal, would pay for these extra men. I do not say that we should increase our present charge to one anna a ton for all coal inspected, but I think that we should say one anna for export coal. However, that is a matter for the trade to settle.

(*To Mr. Banerjee.*)—If there was only one inspector in each district who had to inspect every wagon of shipment coal despatched from collieries in that district, he could not possibly inspect one million tons per year.

31. Sale on analysis.—(*To Mr. Banerjee.*)—In view of the fact that second class coals are often high in calorific value, it will certainly be unsafe to sell on calorific value only. For instance, Ramgarh-Bokaro coal although high in calorific contains 16 per cent. of ash. Jharia first class contains 12 to 14 per cent. I have known Selected Jharia—14A to contain 9 to 10 per cent. on despatches. A particular section of No. 12 seam contains from 13 to 15 per cent., and seam No. 10, according to the section taken, contains anything between 15 and 22 per cent. of ash. I do not agree that the inferior coal at the Jharia end of the field is inferior to the inferior coal at the Sijua end although the superior coal at the Jharia end is superior to the superior coal at the Sijua end: I consider that, as a rule, coal at the Sijua end is inferior to the coal at the Jharia end, whatever coal you take: this is true not only of the superior seams but also of the inferior. But, of course, there are pockets of coal on the Sijua side with a very low percentage of ash. One may safely say that the quality of the coal in each seam varies in each colliery.

(*To Mr. Bray.*)—Whether seams 10 and 11 give coal suitable for export depends on the competition. To compete with the coal at present coming from South Africa seams 10 and 11 are not good enough.

(*To Mr. Banerjee.*)—If you were able to despatch 10, 11 or 12 seam coal with only 15 per cent. of ash, it could compete with certain Natal coals giving 15 per cent. of ash, but it would not pay to pick these coals to this extent. The seams which I would advise being exported with a view to competing with South African coal are 14, 14A, 15, 17 and Dishergarh Poniatia.

सत्यमेव जयते

**A. V. HAWKINS, Esq., C.I.E., Coal Transportation Officer,
Calcutta.**

WRITTEN STATEMENT.

B. Possibility of economies in transport to Calcutta.

6. (a) Improvements in wagon supply.—Supplies of wagons to collieries for the transport of export and bunker coal should be completely controlled; that is to say, "Public Supplies," which are granted to collieries under the present system without authorisations from the Coal Transportation Officer, should be entirely eliminated. The objections to "Public Supplies" are, (1) they are made in small lots of wagons which tend to increase marshalling and shunting within the coalfields themselves and, generally, militate against the Coal Transportation Officer's efforts to maintain a high standard of transportation; (2) "Public Supplies" permit of indifferent coals being loaded up for the docks, which are found unsuitable for bunker purposes and get a bad name for Indian coal in foreign markets. Incidentally, I would remark that the chief cause of Bengal coal being given a bad name in the Bombay market was the promiscuous despatch to that port of indifferent coals, in wagons obtained under "Public Supplies."

I consider further, that dock traffic should be worked in full train loads to special timings direct from the coalfields to the docks. There should be no delays *en route*, and dock trains should be specially watched and transit expedited. A quick return of empties to the coalfields, which the use of special trains will facilitate, should also be ensured. The authorisation of wagons in large units of transportation will assist in the marshalling and despatch of these special dock traffic trains.

6. (b) **Their influence on costs.**—A reduction in losses from pilferage will be an important advantage accruing from the introduction of such measures. A further advantage of quickening transit of coal trains to the docks will be the avoidance of detentions to steamers and consequent demurrage bills, a matter which is dealt with also in my reply, below, to Question No. 13. Moreover, under the present system, coal has frequently to be taken by lighters from the depôts at Shalimar to the Kidderpore docks, involving extra expense; this is undesirable and should be done away with.

7. **Type of wagons.**—I would suggest the exclusive use of open wagons which would admit of screening plants being used for loading direct into wagons. The measures suggested in my reply above to Question 6 (a) regarding the special watching and quick transit of dock trains, will minimise the chances of loss from pilferage, to which open trucks are ordinarily exposed. The use of such trucks will, also, facilitate unloading at the docks.

8. **Railway freight.**—The rebate of 25 per cent. in freight on shipment coal brought into force from 1st January 1924, was appreciated and did help in the diversion of coal for Indian ports to the rail-sea route.

The concession, however, ought to be in the quotation of a special reduced rate and not as a "rebate" which necessitates further correspondence after the completion of the shipment.

Apart from the reduction of freight on shipment coal the question of excessive coal rates has been raised frequently by coal merchants and colliery owners.

With the general advance in the working expenses of railways the coal traffic had to bear its share equally with other commodities in the increase in freight rates, and without a detailed examination of data on each railway system it is impossible to recommend a revision of the schedule of the coal rates now adopted by nearly all railways in India.

It is desirable however to consider the quotation of special lump sum rates from the collieries to large industrial centres, such as Cawnpore, Ahmedabad, Bombay, Delhi, etc., having in view the movement of coal in large and regular units.

In this connection I would suggest an examination of the terminals levied by the several railways on coal traffic and the adoption of a universal terminal charge of two annas a ton, except in cases where special sidings or facilities have been provided or where local conditions require a slightly higher charge.

The accompanying statements are a comparison of the various coal schedules which have been adopted from 1920.

Cognate to this rates-matter is the question of the "Prepayment of Freight," which measure was forced upon railways by the dishonest practices of certain coal traders and petty colliery owners, who rejected coal consignments at destination and later bought in the coal at auction, at prices which did not cover the carrying railways' dues. The request for cancellation of the measure arises chiefly from coal merchants, who are the distributors of coal throughout the country side and who have to finance not only the price of the coal but also the freight for periods of two or three months. Small collieries too in the present coal slump are supplying coal on credit, but cannot afford to find the freight charges also. Complaint has been made by consumers that where they have advanced freight to despatching collieries they have received rubbish instead of coal at destination, and having met the heavy freight charges they have perforce to accept the rubbish. From my personal experience I recommend the retention of the measure which most of the larger collieries find workable.

9. Work of Coal Transportation Officer.—Every effort has been made to facilitate despatches of export and bunker coal. Shipment coal, particularly, has always been singled out for special assistance. In this connection I would reproduce paragraph 11 of the record of the 31st meeting of the Advisory Committee to the Coal Transportation Officer, which was held on the 21st October 1924.

“11. Mr. Hawkins mentioned that owing to an abutment of Bridge No. 405 between Durgapur and Oyaria having cracked, single line working had to be introduced and despatches down country consequently had been interrupted to some extent. Arrangements were made accordingly to give preference to shipment coal to prevent vessels coming on demurrage.”

Bunkering coal requirements also have been given special consideration by the Coal Transportation Officer, at the instance of the Advisory Committee. The following is an extract from the record of the 8th meeting of the Advisory Committee, which was held on the 26th September 1923:—

“Mr. Panton suggested that special arrangements should be made for the maintenance of stocks at the depôts for bunkering purposes. He said these depôts were useful also to neighbouring Jute Mills to whom supplies could be rushed in times of emergency.

It was generally agreed that the maintenance of stocks at *colliery-owned* depôts should be given special consideration by the Coal Transportation Officer.”

I should like to point out, however, that the export trade represents only one aspect of the Indian Coal Trade and calls for a comparatively small amount of attention from the Coal Transportation Officer, whose duty it is to safeguard the interests of coal consumers throughout the country and of the coal producing industry as a whole. This is dealt with more fully in the Note attached regarding the expansion of the Coal Transportation Office into a large organisation or Department (*vide* Annexure A).

C. Possibility of economies at the Docks and coal depôts.

11. Improvements in handling wagons and results on costs.—The suggested Department would be in a position to decide on the details of working which would ensure the best results, such as by—

- (a) the extension of existing sidings at the docks,
- (b) the use of special wagons (open trucks) which would facilitate unloading at the Docks.

12. Loading and shipping facilities.—So far as I know, loading facilities at the docks are sufficient for the present. Should, however, exports increase to the extent hoped for, it will probably be necessary to provide additional mechanical loading plant of a more modern type. It will be remembered that the facilities available in this respect, at the time when the embargo on coal exports was imported (in July 1920), were far from sufficient, and so far as I am aware no important additions have been made to the facilities then provided. When necessary, schemes for improvement in the facilities for both loading and shipping coal would be dealt with by experts in the suggested Department.

13. Storage and stacking at docks.—Though at one time the Traffic Manager, Port Commissioners, anticipated no difficulty in allotting storage space for 40 to 50 thousand tons of coal allowing 10,000 tons for each berth reserved for coal shipments, I am opposed, personally, to the provision of storage and stacking space at the Kidderpore Docks. The necessity for such space, I consider, would be obviated if wireless information of the arrival of a ship could be obtained three days ahead, so as to ensure wagons arriving with coal, as soon as the ship was berthed.

An objection to the provision of stacking space would be the probability of depôts being sub-let, a difficulty which has been experienced on the railways.

14. **Facilities at Bunker-coal depôts.**—The only suggestion I have to make is that the sidings provided at Howrah and Shalimar should be sufficient to handle whatever unit of transportation is decided on. The present unit of a half rake (25 wagons) is considered by many to be unduly restrictive, and it is thought that a unit of 20 wagons would be within the reach of many more collieries and consumers and would, therefore, be more suitable.

F. Grading, inspection and certification of coal.

24. **Grading of coal.**—In the case of "Export" coal I am in favour of grading according to both quality and condition. By "condition," I mean the size of the lumps of coal forming part of a particular shipment, as regulated by the screening plant employed whilst loading at the collieries. That is to say, "grading" should not be confined to a selection of the quality of coal judged according to the seam from which the coal is drawn, or its calorific value as determined by analysis, without regard to the need for "sizing," or for some measure of uniformity as to the size of the individual lumps of coal making up the shipment.

In the case of "bunkering" coal, "grading" need apply to quality only: the condition of the coal would necessarily be affected by dumping at depôts.

26. **Mesures to effect grading.**—The suggested Department should standardise various coals, after testing them in any way they consider expedient, i.e., by running tests, etc. My information is that the present system of classification of coals is not accepted as correct by all experts.

27. **Control of grading.**—Grading should be controlled by the suggested Department to be constituted as proposed in the Note attached, (Annexure A.).

28. (a) **Inspection and certification.**—I am in favour of a system of this sort, as regards both quality and condition, for export coal, and as regards quality only, for bunker coal.

(b) **Agency for the purpose.**—It should be controlled by the Department referred to above, through the agency of its Executive Officers.

29. **Compulsory versus Voluntary Grading.**—The creation of the Department and the delegation of powers to it would probably require legislation.

30. **Meeting of costs of grading and inspection.**—(This is dealt with in the Note.)

31. **Sale on Analysis.**—The Department would be in a position to accept the analyses of competent parties and to issue certificates on such analyses being furnished.

G. Pooling of coal.

32 and 33. **Practicability of pooling.**—My opinion is that if the Department had a sufficiently efficient executive, the pooling of coal could be arranged, with advantage; not otherwise.

34. **Compulsory pooling.**—I am opposed to this.

STATEMENT "A."

Statement of charges in Coal Schedule.

		Per Md. per mile.	
Prior to 1st April 1920.			Pis
X {	for distances up to 75 miles inclusive		0.14
	Plus 76 to 200 miles		0.12
	Plus 201 to 500 miles		0.08
	Plus 501 and above		0.05
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From 1st April 1920. Per Md. per mile.

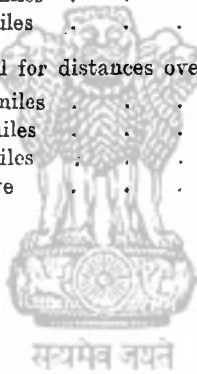
Y {	for distances up to 100 miles inclusive	Pie.
	Plus 101 to 200 miles	0·15
	Plus 201 to 700 miles	0·125
	Plus 701 and above	0·06
		0·05

From 1st April 1921.

Z {	for distances up to 200 miles inclusive	0·15
	Plus 201 to 300 miles	0·13
	Plus 301 to 700 miles	0·07
	Plus 701 and above	0·06

From 1st April 1922.

P {	(i) for traffic carried for distances 400 miles and under—	
	From 1 to 200 miles	0·165
	Plus 201 to 400 miles	0·13
	(ii) for traffic carried for distances over 400 miles—	
	From 1 to 200 miles	0·15
	Plus 201 to 300 miles	0·13
	Plus 301 to 700 miles	0·07
	Plus 701 and above	0·06



STATEMENT B

Calculated rates for coal for the periods shown below and the percentage of increase.

Distance in miles.	X	Y	Percentage increase, of increase,	Z	P	Calculated* rate at the force from 1st April 1922.	Percentage increase comparing the Schedule at present in force (P) with the Schedule in force prior to 1st April 1920 (X).	Percentage of reduction if the Schedule (Y) in force from 1st April 1920 to 31st March 1921 were enforced during the slack season July to September.
	Rs. A. Per ton.	Rs. A. Per ton.		Rs. A. Per ton.		Rs. A. Per ton.		
50	1 0	1 2	12.5	1 2	..	1 2	12.5	..
100	2 0	2 2	6.2	2 2	..	2 2	21.8	12.8
200	3 11	4 0	8.4	4 4	6.2	4 11	27.1	14.6
300	4 9	4 13	5.4	6 2	27.2	6 8	41.4	25.9
400	5 6	5 11	5.8	7 1	24.1	7 1	31.3	19.4
500	6 4	6 8	4.0	8 1	24.0	8 1	29.0	19.3
600	6 15	7 6	6.3	9 1	22.8	9 1	30.6	18.6
700	7 11	8 4	7.3	10 1	21.9	10 1	30.8	18.0
800	8 6	8 15	6.7	10 15	22.3	10 15	30.5	18.2
900	9 1	9 10	6.2	11 12	22.0	11 12	29.6	18.0
1,000	9 13	10 6	5.7	12 10	21.6	12 10	28.6	17.8
1,100	10 8	11 1	5.3	13 8	22.0	13 8	28.5	18.0
1,200	11 3	11 12	5.0	14 5	21.8	14 5	27.9	17.9
1,300	11 15	12 8	4.7	15 3	21.5	15 3	27.2	17.6
1,400	12 10	13 3	4.4	16 0	21.3	16 0	26.7	17.5

ANNEXURE A.

Scheme for expansion of Coal Transportation Office.

(Vide reply to question 9.)

The Questionnaire deals exclusively with coal required for export and for bunkering purposes, and with such Indian coal as has to compete with foreign coal at various Indian ports. As indicated in my reply to No. 9 of the Questionnaire the transportation of this class of coal forms only a part, and, at the present time, when the demand for Indian coal for export and bunkering is comparatively low, a small part of the work of the Coal Transportation Office.

Even if, as a result of any action of the present Committee, foreign markets for Indian coal are opened up, the work of transporting this increased amount of coal would still continue to be only a small part of the work of this office, and no very great effort would be required to make arrangements to facilitate the transport of this coal.

The question of the internal distribution of coal I consider cannot be overlooked if any serious endeavour is contemplated to better the position of indigenous industries, including the coal industry itself.

2. My views, in the main, coincide with those set out in the Coal Transportation Officer's letter No. 108-3-J, dated the 10th March 1923, to the Chief Commissioner for Railways, wherein the arguments in favour of control as against decontrol, and full control as against partial control, are discussed *in extenso*. The only point on which I have altered my opinion is in regard to the agency through which control should be exercised, viz., the Coal Transportation Office.

While this office is sufficiently equipped for the work now required of it, the functions of the office are not far-reaching enough.

I am of opinion that for the purpose of carrying into effect the full control advocated in the Coal Transportation Officer's letter referred to above, and again in letter No. 14874-P. I., dated the 17th March 1923, sent to the Government of India in the Department of Commerce, by the Director of Industries, Bengal, in his capacity of Chairman of the Advisory Committee, it would be advisable to appoint a representative Board, which would function through a Coal Department or Bureau.

The entire control over coal transportation would be vested in the Board, on which Government, Railways, Port Commissioners, Shippers, producers and consumers would be represented.

3. The members of the Board would be paid a fixed fee for every meeting attended. Ordinarily, the Board would probably not need to meet oftener than fortnightly during the busy season and monthly during the slack season. Special meetings would of course be called in between as necessity demanded.

At meetings the Board would receive a "progress report" from the Head of its executive Department, which might be designated the "Coal Department," covering the previous fortnight or month, in the case of the regular meetings, and covering the particular periods passed through, in the case of the special meetings. In addition, at all meetings, the Board would call for any information from, or give any instructions to the Head of the Coal Department, in consequence or furtherance of the Board's administrative control over its Executive.

4. The Board would have a say in the purchase of coal on behalf of Railways, Government Departments and all large consumers. Experience has shown that indiscriminate purchases in various coal areas frequently necessitate "cross traffic" *via* the exchange links from the E. I. Railway to the B. N. Railway and *vice versa* and, what is more objectionable, they occasionally conduce to one or the other large consumer monopolising the entire handling capacity of a particular section in the coal districts.

5. The Board would also have a say in such matters as the pooling and grading of coal for export, the modification or amplification of any scheme of coal wagon distribution that may be adopted, and would, in a word, direct the general policy of the present offices of the Chief Mining Engineer and the Coal Transportation Officer which would be merged into the proposed Coal Department.

I do not propose putting up a wagon distribution scheme for consideration, as I think we have already got as far as we shall in the evolution of basic principles for working, which is all that is wanted; modifications will constantly be necessary in any scheme that is adopted, and so long as there is a representative Board to approve the modifications, there should be no cause for complaint.

6. The function of the Coal Department on the transportation side would partake of the nature of those at present performed by the Coal Transportation Office only the former would be more intensive in character and more comprehensive in effect. That is to say the functions of the transportation section of the Department would include distribution of wagon supplies which are at present arranged for by the Chief Mining Engineer on account of coal for the Railways, Government Departments, etc.; and further, they would not cease merely with the authorising of wagon supplies, as is the case at present, but would extend to a control over the allotment of wagons against authorisations issued.

The Department would also be responsible for the effective supervision of the method in which coal wagons are handled, at collieries, in transit, and at destination stations. All this presupposes a large and efficient Executive, which I consider a *sine qua non* if any attempt is to be made to improve conditions of coal transportation in India.

7. The Coal Department would therefore require—

- (1) a larger staff than the present Coal Transportation Office, at headquarters,
- (2) Allotment Officers in the coal districts and Travelling Inspectors, and
- (3) a whole-time officer, with a staff of two or at the most three clerks in each certifying centre in the country. There should be at least 8 such centres which, I suggest, should be Calcutta, Madras, Bombay, Karachi, Ahmedabad, Lahore, Delhi and Cawnpore. The first duty of the certifying officers would be to compile up to date registers of all coal consumers showing the monthly consumption of each. These matters of executive detail need not, however, be elaborated here.

Allotment as well as certifying officers would be directly responsible to the Head of the Coal Department. It is unreasonable to expect the best results from allotment officers who are responsible to Coal Managers instead of the authorising (Coal Transportation) Officer, and from certifying officers who get little or no extra remuneration for certifying work, and are responsible for its proper performance, to nobody.

8. The next question which suggests itself is how the cost of the Coal Board and its large Executive is to be met. For answer I would suggest that a small toll of a rupee per wagon should be levied on every wagon loaded at the collieries. This suggestion might raise an outcry at the start, but a similar toll has already been paid for many years by consumers who have purchased coal through the Chief Mining Engineer, and I do not think it would be long before all consumers realised that it would be worth while paying an almost negligible fee to ensure the quality and regularity of their coal supplies.

9. While there are many who are opposed to any measures suggestive of restrictions on trade, I am convinced that a Coal Department working on the lines indicated above would go a long way towards the establishment of "free trade" conditions, which is the goal we are all seeking. By "free

trade" I mean the giving of every facility possible to a colliery to despatch all the coal that is required to the consumer who requires it.

To attempt to go back to methods of allotting wagons to collieries on the basis of the quantities of coal raised and in stock, without regard to the existence or otherwise of a demand for coal, is, I consider, tantamount to the reintroduction of an unfair and wholly unjustifiable form of control.

In conclusion I cannot do better than invite a careful perusal of the two letters referred to in paragraph 2 above. A copy of each of these letters is attached.

Extract from letter No. 108-3-J., dated the 10th March 1923, from the Coal Transportation Officer, Calcutta, to the Chief Commissioner for Railways, Railway Board, Delhi.

* * * * *

I now turn to the main point raised in your note, viz., whether control should continue or not, and I submit that the time is now ripe for the question to be faced squarely and for a definite and final answer to be given.

The case for decontrol may be stated as follows. The coal industry has in fact been singled out for severe restriction during recent years, resulting in the development of certain existing collieries being retarded and the starting of new collieries being rendered difficult. While such action might have been readily accepted as a necessary measure during the war, when it was imperative that railways and industries connected with the successful prosecution of the war should be given the first call on the very limited transport facilities available, the perpetuation of control now that the war is over and railway facilities have improved cannot but be regarded by the coal industry as an invidious attempt on the part of Government to check its growth. The argument which suggests itself is that one of the effects of control has been the protection and promotion of other industries at the expense of the coal industry, which should now be given an equal chance with the others to expand under the operation of the ordinary laws of supply and demand. From the point of view also of certain of the other industries, control has been considered invidious owing to the fact that they were given grades of preference based on an arbitrary estimation of their relative importance. At the same time I think I can safely say that while some consumers have grudged others the enjoyment of any superior benefits all consumers would, generally speaking, rather be given some assistance in the matter of obtaining their coal supplies than be given no assistance at all; and what I have said above is, I think, practically all that can be said in support of decontrol, so far as producers and actual consumers of coal are concerned. There is, however, the point of view of the E. I. and B. N. Railways to consider and it is obvious that they would welcome a withdrawal of control which necessarily entails a certain amount of additional labour and, incidentally, expense. Lastly there is the desirability, from the Government standpoint, of withdrawing from all forms of interference with the industrial development of the country. This touches on the second point of your note, viz., the question whether control over coal wagon distribution, if it still be necessary, should continue under Government agency; but I will deal with this point later.

I now proceed to a discussion of the case for control. On general grounds there can be no question that control, or at least some measure of control, is necessary: the fact is that there is actually, at the moment, more coal in the coalfields than can be shifted and the point to decide is what coal should be shifted, or to be more precise, which of the several consumers requiring coal should be given assistance in the matter of getting some portion of the coal which can be got away. This fact, viz., that there is at present more coal on hand at collieries than can be cleared applies, of course, with greater force to some sections, e.g., Kusunda and Jharia, than to others. The system of wagon distribution which was introduced on the 15th November 1922 is not considered a satisfactory one, as you will have gathered already from

copies of the records of recent meetings of the Advisory Committee and from my letter No. 108-3-J., dated the 26th February 1923. Its main defect lies in the fact that the number of wagons available in a district is apportioned to the several collieries in that district on the basis of their stocks and raisings, irrespective of the quality of the coal and the existence or otherwise of a demand for it. Thus wagons are being used for the transport of both coal which is actually wanted by consumers and coal which is not wanted by them but which they are forced to use because coal of the required quality cannot be obtained in sufficient quantities. On the other hand it is common knowledge that in spite of complaints of weakness and inability on the part of the railways to handle the coal traffic, collieries' stocks which are subject to seasonal inflation have, generally speaking, disappeared by the end of each year, so that in the net result practically all the coal raised is cleared. It is, however, I think necessary to ensure firstly that coal of the required quality is brought away, as and when it is needed, and secondly that no quantity of such coal is left behind in the coalfields at the close of a year while undesirable coals are thrust upon consumers. I say coal of the *required* quality, advisedly. I do not mean to discriminate between superior and inferior qualities of coal or between different descriptions of fuel such as steam coal, hard coke, slack, etc. I quite realise, for instance, that while a gas company must have 1st class steam coal, a jute mill could do with good 2nd class coal; and while an iron foundry may be in need of hard coke, a brick kiln may be in as great need of slack. The question, I think, which suggests itself in this connection is whether it is justifiable to continue to control the coal industry. In my own view it is justifiable, because it becomes a question of considering the claims of the coal industry as a unit on the one hand and India as a whole, representing all other industries, on the other. In support of this view I would invite a careful analysis of what is actually taking place under the present system of partial control. Only a limited number of authorisations under "Special Supplies" is issued, resulting in a comparatively large proportion of the wagons available being free for distribution to collieries under what is known as "Public Supplies." Owing, however, to the very acute shortage of wagons in the coalfields last month a considerable number of authorisations has accumulated, as indents against them could not possibly be met. For this reason I decided some 10 days ago to withhold the issue of further authorisations of ordinary supplies in rakes and half rakes until such time as the arrears were cleared. During the past 10 days I have been compelled to make a fairly extensive use of the "Emergency" clause; but in spite of the fact that I have issued general instructions to the District Offices that these emergency supplies should take precedence even over "Special Supplies" I find from the daily statements of actual supplies made to collieries that there has been a tendency to ignore authorisations issued by my office and to indent, for preference, under "Public Supplies." In two specific instances it has come to my notice that a colliery has deliberately evaded indenting against authorisations for "Emergency Supplies" owing in all probability to the fact that "Public" or "Pro rata" supplies were easily obtainable and were at the time more "attractive." This I consider is another point of weakness about the present scheme. It is true that paragraph 7 (b) provides against wagons being supplied pro rata to a colliery, unless "all authorisations issued by the Coal Transportation Officer are first indented against"; but it is obvious that this proviso is not being observed by the District Offices. At the same time I quite see that from a practical working point of view it is not feasible when making allotments against indents under "Public Supplies" to check always whether or not the indenting collieries have on hand any outstanding authorisations issued by my office. Such a procedure would unduly delay the work of the allotment officer which is necessarily to be performed within a very limited time. As it is possible, therefore, under present conditions for collieries to suit their convenience in the matter of indenting against authorisations it will readily appear that the whole object of issuing them, *viz.*, to give the consumers concerned preference in the matter of wagon supplies is defeated, and the position of my office becomes farcical. Despite what "Capital" says in its issue of the 8th March 1923 regarding the scarcity of

wagons for distribution under "Public" I have information from reliable sources, and the further evidence of figures showing actual supplies received from the district offices, supporting my belief that "spot" sales are being effected on a large scale. This undesirable state of affairs results from the fact that wagons under "Public" are indented for not on behalf of a particular consumer or a particular destination, but *viâ* a route leading to an attractive market. Thus it happens that wagons are indented for by a colliery *viâ*, say, Mokameh Ghât, when the colliery has no order whatever for coal; so that the wagons when loaded are sold before they reach the Weighbridge station to the highest bidder who *then* decides on a destination for them. An improvement can be effected by insisting on *all* wagons being indented for by collieries for particular consumers or at least particular destinations, but this would only partly remedy the situation. I am definitely of the opinion that partial control such as it at present exercised practically spells no control and gives rise to difficulties and anomalies of the kind I have attempted to describe.

On the other hand should control be withdrawn altogether I consider impossible conditions would be set up. If, for instance, preference were not given to the I. G. N. & Railway Co., Tata's or to any of the consumers included in the list of "Special Supplies," the position would be as follows. Indents on behalf of the consumers referred to, as well as on behalf of any and every other consumer, depôt-holder and middleman, would have to be treated in exactly the same way. On the Kusunda section we work on a capacity, for purposes of the present scheme, of 300 wagons a day. Now "Loco" —we will assume that Loco supplies in any case will continue to receive preferential treatment—will take on an average about 230 of those wagons. The remaining average of 70 wagons will then be available for equal distribution against all other indents. These indents conceivably will amount to anything from a hundred to a thousand or more wagons. It will then become a question of distributing the available balance of wagons to collieries on a percentage of *indents*. That is to say, indents on behalf of the I. G. N. and similar essential Works of Public Utility will be placed on a par with indents on behalf of depôt-holders, speculators and the like. In these circumstances one might imagine a situation like this. The I. G. N. have contracts for, say, 300,000 tons a month, 150,000 tons with collieries which have some principles of fair dealing and the remaining 150,000 with collieries which have no principles at all. The first 150,000 would in any case be indented for on behalf of the I. G. N. The extent to which they would be supplied would, of course, depend on the restraint exercised by other collieries in the matter of indenting on other accounts, since all indents would be "pooled." In regard to the remaining 150,000 tons, however, the position of the I. G. N. would be precarious in the extreme. The collieries concerned, realising their freedom to indent for wagons on behalf of buyers prepared to pay a higher price than the rate contracted for with the I. G. N., would so indent. The I. G. N. would then have to make fitful purchases at ever increasing rates to keep their steamers running. The steamer fares now charged would require enhancement to meet the increased cost of coal to the Company, but it would be an utter impossibility to strike anything like an average cost, with no check whatever on the rapacity of collieries and depôt-holders alike. The only alternative would be for the district allotment officers to weed out indents on behalf of the I. G. N., Tata's and a few others and allot wagons against those indents first; but this of course, would be "control," and a difficult if not unworkable form of control.

It has, I think, long been recognised that some measure of control will always be necessary on behalf of Railways, the I. G. N. and Railway Co., Tata's and other important Works of Public Utility, but the point I have attempted to make is that if there is to be any control, there must be complete control. In other words there should be no question of a *pro rata* distribution, but every single wagon should be supplied to a colliery against a definite authorisation in favour of a definite consignee. This might seem like a suggestion for reverting to the X-Class system. Without wishing to labour the point regarding the merits or demerits of that system, I would

merely mention that I quite realise the undesirability of issuing authorisations, as was done under that system, far in excess of the Railways' capacity for meeting them, resulting in the District Offices being inundated with authorisations which it was difficult to keep a check of. In a word therefore I consider that the number of authorisations should be restricted with reference to the handling capacity of the sections in which collieries are situated and that they should not be allowed to continue in force over indefinite periods, but should be revived, if necessary, from time to time, *e.g.*, every quarter, for the convenience of District Offices.

Adverting to the argument referred to in paragraph 3 above that one of the effects of control has been the protection and promotion of other industries at the expense of the coal industry, I would submit that this argument would fall to the ground were complete control introduced. The effect of such control would be to stimulate the production of the required quality of coal and to admit of a colliery producing this quality of coal receiving all the wagons needed to fulfil its *bonâ fide* contracts, restricted only by the unavoidable limitation of the handling capacity of the particular section in which it is situated, instead of by the inequitable limitation of its transport capacity basis as at present. Such collieries, of course, as produce coal of a quality which is not required will, as a result of complete control, not be able to effect any despatches. But to argue, as the Indian Mining Federation are inclined to argue, that such collieries have a just claim to a share of the wagons available is, in my opinion, the outcome of bad logic and a misconception of principles of truly economical transportation: it is obvious that the wagons available can only carry a certain *tonnage* of coal and if the maximum *power* is not obtained from that *tonnage*, there is going to be a wastage of transport facilities. It would seem desirable that the Indian Mining Federation should once and for all be made to realise that this is the only logical view to take of the position.

There remains the point to which I alluded in paragraph 3 above, regarding the continuance or otherwise of control by Government Agency. If the views which I have set forth in this letter are accepted in the main, I think there can be little doubt that control should be continued by a single authority directly responsible to the Government of India. In my opinion, it is only by such an authority that control could be exercised in the best interests of industries as a whole. To subordinate the controlling authority to the two coal carrying railways would create an undesirable position as there would be a conflict of interests which the authority would not be able to adjust owing to his dual obligations and there would be danger of his subordinating, to the interests of the two railways, the interests of industries, to protect which should be his first and chief duty. It would of course be desirable for this authority to work in the closest possible co-operation with the Chief Mining Engineer whose demands absorb nearly 50 per cent. of the available wagons in the coalfields and with the Director of Wagon Interchange who could render considerable assistance in the maintenance of a sufficient flow of empties to the coalfields.

To sum up therefore my conclusions are:—

- (1) that decontrol is not feasible,
- (2) that control must be complete to be effective,
- (3) that the controlling authority should be an *officer of the Government*.

* * * *

Copy of letter No. 14874-D. I., dated the 17th March 1923, from the Director of Industries, Bengal, to the Secretary to the Government of India, Commerce and Industry.

I have the honour to address you on the subject of the working of the present system of distribution of wagons for coal in the Bengal and Bihar and

Orissa coalfields. It was decided to introduce the present system experimentally for 3 months with effect from the 15th November 1922, the Government of India reserving to themselves the right to add to, modify or abolish, the scheme, or any part of it, as they considered necessary from time to time. Owing to the absence of accurate data as to stocks and raisings it was impossible for the Coal Transportation Officer to introduce the present system on the 15th November 1922 and in reality the system has only been working for a period of somewhat over a month. With the introduction of the system the Government of India appointed an Advisory Committee to assist the Coal Transportation Officer in the execution of the scheme. Under the scheme in the event of emergency the Coal Transportation Officer was to take such action as he considered necessary to authorise emergency supplies giving them such preference as he considered the circumstances of the case required and reporting immediately to the Advisory Committee the action which he had taken.

2. The efforts of the Coal Transportation Officer and of the Advisory Committee to work the scheme outlined have proved in the short period during which it has been tried that it is unworkable. Almost from the date of its initiation complaints were received by the Coal Transportation Officer and it became necessary for him to grant authorisation for emergency supplies to a larger number of concerns than would appear to have been anticipated when the emergency clause was formed. Under the scheme such authorisations for emergency supplies should be treated in such a way as to allow for the re-payment of wagons authorised but from experience it has been found impossible to hold out any hope that the wagons for such emergency supplies will be re-paid. The Coal Transportation Officer assured the Committee that the emergency supplies had been given sometimes to prevent the closing down of concerns and sometimes to avoid compelling consumers to buy coal which they had not contracted to buy and which they did not want. It has therefore been found necessary to use the emergency supply clause in order to enable industrial concerns to carry on in the normal way and this being so it does not appear probable that the necessity for such emergency supplies will cease and therefore it is not at all likely that any opportunity will arise for the repayment of the wagons for such supplies. The working of the system therefore has degenerated into the utilisation of the emergency clause for normal supplies and therefore the system may be considered as having proved a failure.

3. In attempting to work the system complaints have been received by the Bengal Chamber of Commerce and the representative of that body on the Advisory Committee states that since the system has come into working namely since about the 1st February, consumers have not been able to obtain the coal for which they have contracted. The representative of the Bengal National Chamber of Commerce states that no complaints have been received by the body which he represents, but he wanted to know from the Coal Transportation Officer if he had received complaints. In this connection the Coal Transportation Officer has received complaints direct from Bombay, Delhi, Cawnpore and Lucknow. The representative of the Indian Mining Association is of opinion that the system is not one which can be worked equitably. The representative of the Indian Mining Federation is of opinion that the system can work efficiently but that latterly any difficulties which may have arisen have been due to the fact that the Railways have been taking more wagons than are really due to them. He considers that if the Railways both Foreign and Home took only their proper share of the wagons the system would work equitably. It is admitted by the majority of the members of the Committee that while the system is giving wagons for public purpose it is not giving wagons for the carrying out of contracts which have been made between consumers and collieries. The majority (4 to 1) of the Committee consider that the present system is transporting coal from the coalfields which is not wanted by the consumers. The conclusion which the majority

(4 to 1) of the Committee have come to therefore is that the present system is unworkable for these reasons:—

- (1) Unless the emergency clause is utilised for the normal working of the system the consumers cannot obtain coal of the quality which they require.
- (2) While this is the case coal which is not being contracted for is being transported from the coalfields.
- (3) When the emergency clause is used such emergency supplies cannot be treated as advance adjustable cumulative supplies.
- (4) When the Chief Mining Engineer decides to take a smaller number of wagons than usual the Coal Transportation Officer is not in a position to take advantage of the wagons suddenly set free.

The Advisory Committee therefore by a majority of 4 to 1 are of opinion that if a system of control is to remain, and they are in favour of a system of control, then the control must be complete and invested in one authority, and should be extended to cover the requirements of the Home and Foreign Railways and of the Mining Engineer. The Committee are of opinion that such supplies can be regulated by the controlling officer without detriment to the Railways and the Government and without unduly or inequitably interfering with the supplies required by the other consumers. They are also of opinion that any such system of complete control must be framed in such a way as to (a) utilise the raiiling capacity to its maximum, i.e., they consider that the system should provide wagons for the type of coal which is required by the consumers or in other words when the demand for wagons is large the class of coal which is required by industrialists should have priority and (b) safeguard the interests of the small consumers also by devising means enabling them to obtain supplies in some simple and unoppressive manner. They wish to observe that during the whole year there is very little accumulation of coal in the coalfields, i.e., from year to year the stocks carried over are comparatively small, and although they have the development of the coal industry generally as well as other industries at heart they consider that the present system is one which works to the advantage of one branch of the coal industry while it is to the detriment of another branch and to other industries in general. They therefore consider that the present system requires modification by introducing complete control and although it has only been in work for a little over a month they do not see any reason to conclude that a further period of working would change the position. They therefore hope that the Government of India will consider at a very early date the question of introducing a new system which will give complete control to one authority, which will properly regulate all supplies of wagons and transport from the coalfields the class of coal which the consumer requires and which will take into consideration the needs of industries in general. The urgency of the matter is extreme and it is one which can possibly be best settled in conference.

ANNEXURE B.

Present system of work in Coal Transportation Office.

The scheme of wagon distribution in the coalfields adopted on 15th November 1922 largely controls the work of the Coal Transportation Officer.

The broad outlines of the scheme are reproduced in the schedule annexed, and the procedure adopted by the Coal Transportation Office in dealing with applications for wagon supplies is as follows:

Applications are received as a general rule in the two forms prescribed in the annexure to the schedule of wagon distribution which came into effect on the 15th November 1922. These two forms are known as form "A" for

consumers entitled to "Special Supplies" and form "B" for consumers willing to take their supplies in rakes or half rakes (a rake consists of 50 wagons in one lot and a half rake of 25 wagons).

2. Special Supplies.—The classes entitled to "Special Supplies" are those laid down in paragraph 4(2) of the schedule, consisting mostly of public utility companies and Government requirements. Some of these latter are, however, looked after by the Chief Mining Engineer to the Railway Board. Consumers applying for half rakes are those generally using a large quantity of coal and middlemen arranging supplies for several consumers either in the same station or at different stations on the same route, *via* a junction.

3. Emergency supplies.—A third class of supply which this office deals with is the "Emergency Supply." These supplies are authorised where coal is required urgently by consumers not entitled to "Special Supplies" or for a special class of coal, or when there are particular reasons where either "Special Supplies" cannot be given or half rakes cannot be loaded. For instance, a Glass Factory needs coal very urgently, and it is not able to unload a half rake and/or the particular colliery from which it has bought its coal has not the siding accommodation for loading a half rake, and it cannot by reason of the peculiar circumstances attending the working of Glass Factories wait for the possibilities of the colliery obtaining wagons under "Public Supplies": this office then comes to its assistance with the "Emergency Supply." Secondly, hard coke is not prepared by all collieries and certain industries must have a certain class of hard coke: their supplies have to be authorised by this office. Thirdly, if soft coke for domestic purposes has become scarce in a particular locality due to a dearth of "Public Supplies," this office comes to the assistance of the locality by the authorisation of soft coke. A large number of collieries making soft coke and of consumers requiring soft coke are small users who cannot handle half rakes. In itself the loading of soft coke in quantities is difficult. Fourthly, a consumer of more or less important standing requires coal from a colliery which although it has a half rake siding cannot load selected coal in large quantities: here again this office assists with an "Emergency Supply."

The above refers chiefly to "Emergency Supplies" in lots of less than a half rake. This office endeavours as far as possible to sanction supplies in as large a unit as is possible in the particular circumstances of each case. Emergency sanctions are also given in the case of half rakes, when a half rake is required to be transported urgently, *e.g.*, for shipment or bunkering.

4. Applications. Applications as stated above are usually received in the two forms "A" and "B." Some large consumers and industrials entitled to "Special" supply arrange for a monthly or quarterly programme taking their requirements from various collieries. Many applications are made by personal interview or over the telephone.

The records of this office are more or less complete with regard to the requirements of industries, but all applications are first examined in detail; (1) the consumer's monthly consumption is checked, (2) whether he has already received supplies or authorisations which could possibly postpone a fresh application, (3) as to whether there is need for his being specially helped. Applications from industrials not borne on the office registers are usually referred to the Director of Industries concerned for confirmation, and in some cases a reference is made to the District Magistrate.

If the supply asked for is to be sanctioned the authorisation issues to the District Superintendent. These authorisations issue in duplicate with the necessary instructions as to the method of supply, etc. They are sent in duplicate in order to avoid a possibility of fraud as in the past there have been cases of forgery; the duplicate is returned by the District Superintendent duly signed by him. Copies of authorisations are also sent to the consumer and the colliery.

5. Records of authorisations.—This office maintains its records, *i.e.*, files in the name of consumers. All authorisations are booked in ledgers contain-

ing the names of collieries. This is required for the purpose of watching the supplies authorised not only by this office but by the Chief Mining Engineer, on each colliery served by the railways. It shows the basis of the colliery and furnishes the means of limiting the number of wagons authorised. It also shows the number of wagons actually supplied under various classifications.

6. **Consumers' ledgers.**—The consumers' ledger was also opened when the new scheme came into force. This ledger was useful in showing what supplies were received by consumers applying to this office for sanction, but owing to the fact that the staff of this office was not large enough to maintain these ledgers in detail, its upkeep was abandoned in the busy season of 1923-24. In its place supplies were noted against the entries of authorisations in the colliery ledger.

7. **Statements of daily supplies.**—All supplies made by the District Offices are reported to this office in daily statements showing the actual supplies that have been made against our authorisations. These statements are posted into the ledgers daily, and they furnish the material necessary for the statistical reports which this office deals with.

A statement is also received daily of the allotments made in the districts from the Coal Managers of the two railways, which affords an estimate of the class of supplies that the District Office proposes to allot; it cannot necessarily be accurate as the allotments are made on the expectation of supplies of empties in the district.

8. **Basis book.**—The basis book is prepared by this office quarterly. This basis book shows the names of collieries by railway districts and depôt sections. It shows the average monthly stocks for the last quarter but one, arrived at as follows: to the figures for stocks of the previous quarter *plus* raisings *minus* despatches is added the average raisings of the last quarter but one, and the result is the total quantity of coal on which the collieries basis is worked. The column shows also the percentage of each colliery's basis in relation to the total bases of all collieries in the depôt section. These figures are used by the District Office in making allotments when a "full on indent" supply cannot be given. A set of bases books is submitted. The particulars required for the compilation of this book are obtained personally from the office of the Chief Inspector of Mines, Dhanbad, the Water Board and the Coal Managers.

The following statement shows that it would require approximately 5,955 wagons daily for the current quarter ending 31st March 1925 to clear the estimated stocks and raisings, while the total handling capacity of the several depôts is 3,350 daily. On both railways individual depôts have frequently handled more than their normal capacity.

RAILWAYS.	Name of Districts.	Name of Depôt Sections.	Handling capacity (daily).	No. of wagons required daily from 1st January 1925.
E. I. R. . . .	Dhanbad. . .	Katrasgarh . .	350	638
	" . . .	Kusunda . .	450	906
	" . . .	Jharia . .	250	667
	" . . .	Patherdih . .	370	705
			1,420	2,916

RAILWAYS.	Name of Districts.	Name of Depôt Sections.	Handling capacity (daily).	No. of wagons required daily from 1st January 1925.
E. I. R.— <i>contd.</i>	Asansol . . .	Barakar . . .	150	330
	" . . .	Sitarampur . . .	300	284
	" . . .	Giridih . . .	150	35
	" . . .	Madhupur . . .	50	19
	" . . .	Asansol . . .	70	285
	" . . .	Ondal . . .	350	871
			1,070	1,824
B. N. R.	B. N. R.	Bhujudih . . .	250	213
	"	Mohuda . . .	200	353
	"	Bhaga . . .	250	417
	"	Radhanagar . . .	100	140
	"	Chowrasi . . .	60	92
			860	1,215
	TOTAL E. I. R.	....	2,490	4,740
	" B. N. R.	....	860	1,215
	GRAND TOTAL	....	3,350	5,955

9. Advisory Committee.—The Advisory Committee constituted to assist the Coal Transportation Officer in the execution of the scheme consists of a Member each from the Indian Mining Association, Indian Mining Federation, Bengal Chamber of Commerce and the Bengal National Chamber of Commerce with the Director of Industries, Bengal, as Chairman. Thus both producers and consumers are represented with a neutral official as moderator.

The Advisory Committee meets monthly and at shorter intervals during the busy season when the position of wagon supply alters daily, and problems of demand and supply require urgent consideration. On occasion even weekly meetings were held. That the Coal Transportation Officer recognises

the valuable assistance afforded by the Committee may be noted from the fact that the Committee has met no less than 33 times.

It may be mentioned that the services of the Committee are honorary.

10. Rake system.—The rake (50) and half rake (25) unit of supply has been much criticised. The conditions of authorisation are that the rake or half rake can be loaded by the colliery and unloaded by the consumer in one operation and that the rake or half rake will be booked to one destination only, but it may be invoiced to one or more consumers at that destination. This allows of a rake or half rake being booked *via* a junction to two or more destination stations, a privilege much utilised during the past busy season.

The advantage of the rake or half rake supply in keeping the marshalling yards at the colliery stations clear has been acknowledged, but on the other hand the railways have represented that delay in release at destination owing to limited siding accommodation has resulted in detention to stock.

Some collieries do not welcome a rake or half rake supply because it necessitates the re-inforcing of loading labour by withdrawal of mining or other labour in order to avoid demurrage for detention to empties or there may not be sufficient coal of the class required alongside the rake and it means increased handling costs over the longer lead. Again colliery managers would prefer at times to distribute the wagon supply to satisfy a number of customers.

From consumers complaints have been received that collieries in order to avoid incurring demurrage load up any coal lying alongside the rake and so despatch rubbish. In one case I know of 13 wagons being rejected out of a half rake at destination. Again consumers report that the arrival of a half rake is the signal for the demand for special rates by unloading labour, which the consignee has to grant to avoid demurrage charges. A large consumer at Cawnpore told me that he had to pay two to three rupees a wagon more each time a half rake came for him.

A further objection brought by the consumer and chiefly by the middleman or coal merchant is that since prepayment of freight is compulsory the initial outlay on a half rake of coal easily reaches ten to twelve thousand rupees, a serious matter in consideration of long credits.

On the other hand large consumers such as mills, and mill burning contractors and shippers of bunkering and export coal avail themselves gladly of the half rake supply.

The privilege of combining several destinations for a rake *via* a junction enabled many small consumers to combine and obtain supplies. The East Indian Railway were pressed to agree to allow two or three stations in the same engine-run section to combine for a half rake but difficulties were apprehended. This gave rise to the anomaly of a half rake from a Bengal-Nagpur colliery being accepted *via* a junction for three stations on the E. I. Railway which could not be served by a half rake from an East Indian colliery.

In authorising rakes *via* a junction for stations on a metre gauge railway it had to be remembered that 25 wagons on the standard gauge equalled 50 wagons on the metre gauge, and accordingly a half rake has often been authorised for 9 or 10 destinations.

The rake unit of 50 wagons was adopted being a train load but in practice the load is 60 vehicles, so that at least three shunts are necessary to marshal a train composed of 2 half rakes *plus* 10 wagons. In consideration of the points detailed above, and from experience gained I recommend that the unit of supply be a rake of twenty (20) wagons. For shipment or in other special circumstances two or more rakes may be sanctioned for supply on the one day. Similarly, as at present when circumstances require, a half rake (10) may be granted. A larger number of individual consumers will benefit and more collieries will receive unit sanctions

The following statement supports this :—

	Number of collieries.	COLLIERIES CAPABLE OF HANDLING			
		Rakes.	Half rakes.	Lots of 20 wagons at a time.	Lots of 15 wagons at a time.
Adra (B. N. R.) . . .	167	29	56	63	72
Dhanbad (E. I. R.) . . .	304	45	82	89	109
Asansol (E. I. R.) . . .	357	51	80	89	103
	828	125	218	241	284

11. **Middlemen.**—A question has been raised regarding the more extended recognition of middlemen or coal merchants in the matter of authorisations; and it has been asserted that these men sometimes received wagons to the detriment of legitimate industrials.

Soon after I assumed charge of the duties of Coal Transportation Officer I realised that there were innumerable small consumers throughout the country who depended on coal merchants or middlemen for their small supplies. In many cases long credits were required by consumers such as by brick burners, small glass workers, etc., and again in some cases the coal supplier was paid in kind at the end of the season; such as by gur and sugar makers. Accordingly to enable me to obtain the full advantage of the half rake system I recognised middlemen or coal merchants who were able to fulfil the half rake conditions as veritable consumers or industrials.

I was helped by colliery owners who through their sales departments built up half rake orders and in the half rake often included brick burning, ginning factories and spinning mills at stations hundred miles apart. The results I submit justify the policy adopted.

12. As already stated statistics of wagon supplies are prepared by this office. Weekly reports are sent to the Railway Board, Commerce Member, Director of Wagon Interchange, etc.

13. In conclusion I submit herewith a statement showing an analysis of the wagon supply, month by month since December 1922, when the present scheme began to operate.

Daily average Empties to Spare on E. I. Railway from December 1922 to December 1924.

	Wagons. Daily.
1922 December	1,024
1923 January	937
February	566
March	523
April	435
May	544
June	1,127
July	2,089
August	2,042

											Wagons, Daily.
1923	September	.	.	.	.	.	.	.	.	.	317
	October	.	.	.	.	.	.	.	.	.	4,180
	November	.	.	.	.	.	.	.	.	.	451
	December	.	.	.	.	.	.	.	.	.	244
1924	January	.	.	.	.	.	.	.	.	.	168
	February	.	.	.	.	.	.	.	.	.	283
	March	.	.	.	.	.	.	.	.	.	432
	April	.	.	.	.	.	.	.	.	.	183
	May	.	.	.	.	.	.	.	.	.	23
	June	.	.	.	.	.	.	.	.	.	55
	July	1,367
	August	3,150
	September	500
	October	2,574
	November	2,120
	December	100



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Statement showing the supply of Wagons on the E. I. and B. N. Railways from 1st December 1922 (when new scheme came into force) up to 31st December 1924.

Month.	Loco.		SPECIAL PUBLIC.		PUBLIC.		TOTAL.		Total of all classes.	Indents.	Percent- age of supplies to indents.
	No. wagons.	Percentage to total.	No. wagons.	Percentage to total.	Half rake.	Ordinary Public.	No. wagons.	Percentage to total.			
1	2	3	4	5	6	7	8	9	10	11	12
		Per cent.		Per cent.				Per cent.			Per cent.
December 1922	29,423	40.08	16,322	22.57	2,835	23,742	26,577	36.75	72,322	117,457	61.57
January 1923	31,740	44.65	14,230	20.02	2,707	22,407	25,114	35.33	71,084	128,805	55.19
February 1923	37,826	55.22	15,746	22.06	2,923	12,014	14,937	21.8	68,509	193,294	35.44
March 1923	37,292	48.12	19,851	25.62	2,091	18,257	20,348	26.28	77,491	194,709	39.8
April 1923	31,730	44.42	19,041	26.66	2,017	18,642	20,659	28.92	71,430	164,937	43.31
May 1923	33,650	43.23	19,107	24.54	3,431	21,656	25,067	32.23	77,844	132,903	58.57
June 1923	34,223	47.29	14,481	19.97	1,808	22,039	23,737	32.74	72,501	95,751	75.93
July 1923	32,707	47.19	16,034	23.13	450	20,117	20,567	29.68	69,308	83,733	82.77
August 1923	29,410	44.4	16,616	25.08	225	19,991	20,216	30.52	66,242	77,167	85.84
September 1923	29,237	47.63	19,482	31.74	942	11,722	12,664	20.63	61,383	131,964	46.52
October 1923	38,127	47	20,517	25.29	2,924	19,653	22,477	27.71	81,121	204,276	39.71
November 1923	34,605	41.12	21,119	25.1	6,252	22,145	28,427	33.78	84,151	192,137	43.79
December 1923	33,910	44.99	24,670	32.73	5,367	11,428	16,795	22.28	75,375	201,326	37.34
January 1924	35,196	46.11	28,363	37.16	6,230	6,548	12,788	16.73	76,327	244,104	31.27
February 1924	34,238	43.6	27,821	35.42	7,112	9,366	16,478	20.08	78,537	266,941	29.42

Month.	Loco.		SPECIAL PUBLIC.		PUBLIC.		TOTAL.		Total of all classes.	Indents.	Percent- age of supplies to indents.
	No. wagons.	Percentage to total.	No. wagons.	Percentage to total.	Half rake.	Ordinary Public.	No. wagons.	Percentage to total.			
1	2	3	4	5	6	7	8	9	10	11	12
		Per cent.		Per cent.				Per cent.			Per cent.
March 1924 . .	37,170	42.68	30,088	35.24	8,513	10,715	19,228	22.08	87,086	233,129	30.76
April 1924 . .	37,154	44.71	26,549	31.94	7,428	11,977	19,405	23.35	83,108	270,769	30.69
May 1924 . .	36,399	47.77	31,743	38.17	5,381	9,639	15,020	18.06	83,167	277,552	29.96
June 1924 . .	32,093	39.68	31,652	38.07	4,779	13,717	18,496	22.25	83,141	205,098	40.54
July 1924 . .	36,172	44.08	25,148	30.64	4,741	16,003	20,744	25.28	82,064	183,945	61.27
August 1924 . .	38,202	44.93	22,172	26.08	2,790	21,852	24,642	28.99	85,016	107,324	79.21
September 1924 . .	41,757	48.15	19,872	23.92	1,778	23,308	25,080	28.93	86,715	138,978	63.39
October 1924 . .	30,708	38.51	20,564	25.79	3,743	24,725	28,468	35.7	79,740	129,283	61.68
November 1924 . .	31,323	40.96	16,473	21.54	1,957	26,720	28,677	37.5	76,473	100,707	75.93
December 1924 . .	36,151	44.85	19,459	24.15	1,769	23,211	24,980	31.0	80,590	122,788	65.68
TOTAL . .	861,403	--	537,725	--	90,103	441,494	531,597	--	1,930,725	4,239,575	--

NOTES.—Col. 2, 4 and 6 are authorized supplies, Col. 7 are supplies made by Railways after 2, 4 and 6 have been met.

Schedule of Wagon Distribution in the coalfields.

(Vide para. 1 of Annexure B.)

On and from the 15th November 1922 the present system of "X-Class Supplies" will cease and a new scheme of distribution of wagons in the coalfields, which will include the supply of wagons in rakes and half rakes, will come into force.

2. Before proceeding to detail the scheme itself, the following definitions and remarks are offered in explanation of certain terms employed in its portrayal.

3. **Basis.**—The basis of a colliery, which is fixed quarterly, is the full number of wagons the colliery actually requires, daily or monthly, during a quarter, to enable it to clear its average monthly raisings and stocks for the preceding quarter but one.

Full Basis.—This is what is termed the "Full Basis" of a colliery for purposes of the scheme, and all wagons would be supplied on this basis if sufficient transport facilities existed.

Owing, however, to the coal handling capacity of the railways being limited by various factors it is necessary to fix a "Transport Capacity Basis" for each colliery for the guidance of the Coal Transportation Officer, in order that he may avoid issuing authorisations in excess of the railways' capacity for meeting them. For this purpose the coalfields are divided up into several districts or areas of supply and the daily wagon capacity of each is fixed. Each district is divided up into depôt stations and each of these again is divided up into a number of pilot sections.

Transport Capacity Basis.—The "Transport Capacity Basis" of a colliery is a proportion of the fixed number of wagons the district in which it is situated is capable of dealing with, the proportion being that which the colliery's stocks and raisings, less its commitments, if any, on Loco. account, bears to the total stocks and raisings of all the collieries in the district in which it is situated. This is the proportion which the Coal Transportation Officer will use as a guide in issuing authorisations, but supplies against his authorisations, will, of course, be governed by the number of wagons actually available for distribution on any one day in a particular district, as Railways are not always able to work up to the figure representing the full number of wagons they are capable of dealing with under ideal conditions.

Pro Rata on Transport Capacity Basis.—"Pro Rata on Transport Capacity Basis" is an allotment of wagons which will be fixed daily by the District Officer for each colliery in his district. The allotment which, together with wagons allotted under "Special Supplies," will not exceed the daily "Transport Capacity Basis" of a colliery, will represent a proportion of the balance of the wagons available for distribution each day in the district after all orders under "Loco." and "Special Supplies" have been met, the proportion being that which the colliery's stocks and raisings, less its commitments, if any, on "Loco." account, bears to the total stocks and raisings of all the collieries in the district.

Advance Cumulative Supplies.—"Advance Cumulative Supplies" are supplies in rakes and half rakes, which are given in advance to a colliery on the authority of the Coal Transportation Officer, and which will have to be equalised. Such supplies will consequently be authorised with caution and with due regard to the possibility of their being paid back by forfeiture of the colliery's "Transport Capacity Basis," in the case of "Special Supplies," and its daily allotment "Pro Rata on Transport Capacity Basis," in the case of non-preferential supplies. Arrears on this account at the end of a month will be carried forward to be paid back in the succeeding month. In the unlikely event, however, of there being any arrears outstanding at the end of a quarter, such arrears will be cancelled and a fresh start will be made with the new bases for the next quarter.

4. The actual scheme of distribution will be as follows:—Preferential Supplies will be given on account of:—

- (1) Mining Engineer's requirements in full and Loco. coal for Home Railways. (Supplies on this account will be given on a colliery's "Full Basis" subject, for the present, to a limit of an average of 650 wagons a day for Foreign Railways Loco. coal, which is arranged by the Mining Engineer, Railway Board. This figure represents the Mining Engineer's requirements on purely Loco. coal account.)
- (2) "Special Supplies," which will include supplies for Messrs. Tata's Iron and Steel Works, Messrs. The Bengal Iron Works at Kulti, Messrs. The Indian Iron and Steel Works at Burnpore, Messrs. The Cape Copper Company at Galudih, Electric Light Companies, Tramways, Gas Companies, Water Companies, Mints, Arsenals, Rifle, Shell and Gun Carriage Factories, and such other Military requirements as are ordered by the Government of India, Ice Factories, Light Railways, Inland Steamers, Irrigation Works and Hospitals except when included under Mining Engineer's requirements. ("Special Supplies" will be authorised by the Coal Transportation Officer up to the limit of the "Transport Capacity Basis" of the supplying colliery.)

The balance of the wagons available after meeting (1) and (2) above will be distributed "Pro Rata on Transport Company Basis," preference being given to rakes and half rakes which will be authorised by the Coal Transportation Officer and treated as "Advance Cumulative Supplies."

5. Wagon supplies to collieries for loading Loco. coal for Home and Foreign Railways will not be authorised by the Coal Transportation Officer but will be programmed quarterly by the two Railways and the Mining Engineer, a copy of the programme for each quarter being sent for the information of the Coal Transportation Officer. In the case of a colliery having Loco. orders for a portion only of its raisings and stocks, such portion may be cleared in wagons supplied on "Full Basis" subject in the case of Foreign Railways Loco. coal, to a limit of 200 wagons a day at any one dépôt station, and the balance of the colliery's raisings and stocks may be cleared in wagons supplied, on its "Transport Capacity Basis" and/or "Pro Rata on Transport Capacity Basis."

6. All wagons given in rakes, half rakes, or otherwise, under "Special Supplies" will be authorised by the Coal Transportation Officer and applications for assistance under this head will be made on the attached "Form A". Transfers of supplies from one colliery to another will not be permitted, unless application is made for the cancellation of the original authorisations and for the issue of fresh authorisations in lieu.

7. Rakes or half rakes given "Pro Rata on Transport Capacity Basis" will be authorised by the Coal Transportation Officer and applications for the same will be made to him on the attached "Form B." Supplies under this head in numbers less than 25 wagons at a time will not be authorised by that officer, but will be given to a colliery, and may be booked at will to any consumer, provided,

- (a) wagons are still available for distribution after Preferential Supplies have been completed and
- (b) all authorisations issued by the Coal Transportation Officer are first indented against.

The number of wagons supplied in rakes is limited to 50 per cent. of the full number that it is estimated will be due on the *Pro Rata* basis for the quarter, thus ensuring that advance cumulative supplies will be paid back in full. This limit may be exceeded in consultation with the Advisory Committee.

8. From the above it will be seen that:—

- (a) a colliery which has sold its entire output to the Railways can get supplies on "Full Basis" only,
- (b) a colliery which has sold only a portion of its output to the Railways can get supplies
 - (i) on "Full Basis" for that portion,
 - (ii) on "Transport Capacity Basis," provided wagons are available, for its raisings and stocks, less its commitments on Loco. account, and
 - (iii) "Pro Rata on Transport Capacity Basis" for such coal as is available for despatch after orders under "Loco." and "Special Supplies" have been met;
- (c) a colliery which has no Loco. orders whatever can get supplies on "Transport Capacity Basis" for its total raisings and stocks up to the limit of which basis authorisations on account of "Special Supplies" will be issued, as well as supplies "Pro Rata on Transport Capacity Basis" for such coal as is available for despatch after orders under "Special Supplies" have been complied with;
- (d) a colliery which has no orders under either "Loco." or "Special Supplies" can get supplies "Pro Rata on Transport Capacity Basis" only.

9. The bases of collieries for the working of the scheme during the period 15th November to 31st December 1922 will be calculated on the stocks and raisings for the quarter ending March 1922.

10. Each coal despatching Railway will send the Coal Transportation Officer daily statements of supplies made under each head, which will enable him to keep in touch with the day-to-day position in the coalfields and to regulate the issue of authorisations accordingly.

11. A colliery indenting for a half rake must take it in full. If a colliery indents for, say, 10 or 15 wagons against an authorisation for a half rake, such an indent will not be met.

Rakes or half rakes will be booked to one destination only, but may be invoiced to one or more consumers at that destination. Collieries indenting for rakes or half rakes authorised by the Coal Transportation Officer for a particular destination and booking any of the wagons to another destination, will be penalised by the stoppage of supplies for a week.

12. On both Railways the present rules in regard to time allowed for loading wagons will apply.

13. An Advisory Committee will be constituted to assist the Coal Transportation Officer in the execution of the scheme. In the event of emergency, the Coal Transportation Officer will take such action as he may consider necessary to authorise special supplies, giving them such preference as he considers the circumstances of the case require, and reporting immediately to the Advisory Committee the action taken.

14. All forms required to be filled in will always be available at the following places:—

- Office of the Coal Transportation Officer, 1, Council House Street, Calcutta;
- Office of the Assistant Secretary, Indian Mining Association, Royal Exchange Buildings, Clive Street, Calcutta;
- Office of the Secretary, Indian Mining Federation, 233, Old China Bazar Street, Calcutta.

15. Any person wishing to have any detail explained should apply in writing to the Coal Transportation Officer.

FORM A.

SPECIAL SUPPLIES.

Form of application to the Coal Transportation Officer, Calcutta, for wagons to be given in rakes, half rakes, or otherwise, on "Transport Capacity Basis."

Date_____

1. Full name and address of consumer_____

2. Description of Industry or Business_____

3. Monthly consumption_____Tons.

4. Stocks held on date_____Tons.

5. Name of Supplying Colliery_____

6. Managing Agent of the Colliery_____

7. Coal will be loaded at_____Siding,

Served by_____Railway.

8. Description of coal purchased.	{	Steam_____	Tons.
		Rubble or Smithy_____	Tons.
		Dust or Slack_____	Tons.
		Coke ^{Soft} _{Hard} _____	Tons.

9. Total number of wagons required monthly_____

State here whether wagons may be supplied in rakes or half rakes_____

10. Name of Railway station at which coal will be unloaded_____

Situated on the_____Railway.

11. Signature of the proprietor or the Managing Agent of the Colliery undertaking to load supplies in rakes, half rakes, or otherwise.

12. Signature of the Consumer or the Managing Agent of the Concern undertaking to unload supplies in rakes, half rakes, or otherwise.

FORM B.

" PRO RATA ON TRANSPORT CAPACITY BASIS " SUPPLIES.

Form of application to the Coal Transportation Officer, Calcutta, for rakes or half rakes only, to be given " *Pro Rata* on Transport Capacity Basis."

Date _____

1. Full name and address of consumer _____
2. Description of Industry or Business _____
3. Monthly consumption _____ Tons.
4. Stocks held on date _____ Tons.
5. Name of Supplying Colliery _____
6. Managing Agent of the Colliery _____
7. Coal will be loaded at _____ Siding,
Served by _____ Railway.
8. Description of coal purchased {

Steam	_____	Tons.
Rubble or Smithy	_____	Tons.
Dust or Slack	_____	Tons.
Coke Soft	_____	Tons.
Hard	_____	Tons.
9. Number of rakes or half rakes required _____
10. Name of Railway Station at which coal will be unloaded. } _____
 Situated on the _____ Railway.
11. Signature of the Proprietor or Managing Agent of the Colliery undertaking to load the rakes or half rakes applied for.

12. Signature of the consumer or Managing Agent of the Concern undertaking to unload the same at destination.

**A. V. HAWKINS, Esq., C.I.E., Coal Transportation Officer,
Calcutta, accompanied by J. E. Terry, Esq., Assistant
Coal Transportation Officer.**

(Oral evidence—January 12th, 1925.)

I have been Coal Transportation Officer since July 1923. Before that I was District Traffic Superintendent of the Eastern Bengal Railway. I have been on railways since 1900.

My work certainly involves preferential treatment but there is special authority for this. There was a notification issued in December 1916 exempting the East Indian Railway and Bengal Nagpur Railway from the operations of section 42 (ii) of the Indian Railways Act. Probably that was a war measure but there is nothing in the Act to prevent it remaining in force. Although the wording of the notification was wider it was intended to cover only coal traffic.

B. Possibility of economies in transport to Calcutta.

6. (a) **Improvements in wagon supply.**—There has been a decided improvement in wagon supply recently. My proposal is for the continuance and the extension of control. The reason why control is justified for coal more than for other commodities is that coal is a key industry and if we are to keep other industries going we must get the coal away from the collieries. It is different with other industries. For example the jute trade can always get jute by the alternative steamer route, while cotton is grown in various parts of India and so there is no concentrated stringency of wagon supply so far as it is concerned. On the other hand the coal trade is concentrated in a small tract.

I agree that the best way of tackling the problem is to improve the wagon supply but I would look at the problem from a wider point of view and would point out that the actual supply of wagons will only be a part of the functions of the proposed department. I do not agree that my scheme involves interference with the consumer, or that the colliery from which he shall purchase must necessarily be dictated to the consumer. Also I should like to remind the Committee that the scheme is mainly intended to cover internal traffic.

(To Mr. Bray.)—The continuance of wagon control would assist towards getting the steamers loaded more quickly because the rakes would be followed from the time of authorisation down to the docks. As would appear from figures given by the Indian Mining Federation, some wagons may take as long to reach Howrah Depôt as they used to in 1919: but that is not an argument against the control system; you will always find some isolated wagons delayed and that is why we are pressing for the movement of coal in larger units. With rakes and half rakes we should run them right through from the colliery to the docks as special trains. Five days was the time fixed by Sir W. Dring for wagons to come down to the docks, turn round, and get back to the coalfields. The control would assist us in maintaining that figure or doing even better: but 5 days is a very good average.

(To Mr. Whitworth.)—The five days rule is not kept to. I think the average now would be about six days, though I have no official knowledge. I have not myself checked the time taken by wagons except when I have received complaints of delay in transit to docks.

(To Mr. Whitworth.)—As regards paragraph 4 of annexure A the idea of the Board's controlling all public purchase so as to avoid cross traffic is justified by this sort of thing that happens at present. If the I. G. N. wants coal at Lalgola ghat it places an order with a colliery on the Bengal-Nagpur Railway and the coal has to come across the exchange links on to the East Indian Railway. It would be better if it were purchased on the East Indian Railway side. By "indiscriminate purchase" I meant no reflection on the coal selected but I referred to purchase being made in such a way as to affect transport. The Board would guide the purchaser to the selection of an equal quality of coal after consideration of traffic possibilities. The Board would guide the consumer and if he still wanted other coal he could get it, unless the Board found that the exchange links were getting blocked in which case it would have to interfere.

(To Mr. Stuart Williams.)—The argument in the letter to the Railway Board of March 1923 was based on the desirability of having either complete control or none. We argued for complete control including the power of interference in certain conditions with the placing of orders. Our main view is still unchanged: the only modification is that instead of a one man agency we would like a Board. We have no reply from the Railway Board on record.

(To Mr. Stuart Williams.)—At present on application being made we authorize wagons to be supplied for transport to the docks but after that our control ends. Given complete control we should extend our activities and secure greater efficiency by ensuring rapid transport of coal by rakes. The allotment would be under the Board who would have Inspectors, independent of the railway staff, to watch the movement of shipment coal through certain points. There would thus be quicker notice of detention and we would bring the facts to the knowledge of the railway authorities. I admit that outside Inspectors would be in no way better than more railway Inspectors if the latter were thoroughly efficient.

(To Mr. Banerjee.)—I agree that the wagon supply has been excellent lately but I do not agree that the cause has necessarily been the improvements made in the marshalling yards and other railway facilities rather than the Coal Transportation Officer's work.

(To Mr. Banerjee.)—My remark about "promiscuous despatch of indifferent coals" refers to a fact reported in my office that there had been public supplies, made on speculation, of coal which was bought at the docks by ship owners short of supplies to fill tonnage: the people quoted the name of a vessel and brought the coal down without any intention of shipping themselves and then sold it to the real shippers. I do not say that I personally have knowledge of this. In my experience it has been the other way round. The coal that came down has been rejected and I have had to permit it to go out to the local mills.

(To Mr. Banerjee.)—As regards special trains to the docks, conditions at Naihati do not affect the proposal because dock traffic does not go into the yard although the general E. B. Ry. up and down traffic does. Dock trains travel on special lines which skirt the Naihati yard; there should be no difficulty about reserving certain receiving lines for the special trains at the docks.

(To Mr. Banerjee.)—As regards statement B in annexure A there cannot be uniformity of increase owing to there being a telescopic schedule instead of a flat rate. Hence there cannot be a proportionate increase. The telescopic system means that the cost per mile of carrying coal for long and short distances is not the same.

(To Mr. Legge.)—My proposal to abolish public supplies for the docks refers, so far as my written statement is concerned, only to export traffic. In annexure A, I advocate intensive control. It is a fact that last year we set certain days aside for public supplies so as to assist small collieries. All wagon supplies were in a sense then being controlled because enough control-orders had been issued to cover all available wagons; but our setting aside certain days for the public supplies traffic did not mean a breakdown of complete control although it was intended to prevent all the wagons being monopolised by special supplies.

(Mr. Stuart Williams.)—If I may make a remark, the case quoted by Mr. Legge was a marginal one while Mr. Hawkins now wishes complete control; that makes all the difference.

(Mr. Terry.)—The point made by Mr. Legge is that whereas the Coal Transportation Officer is advocating complete control, or the total elimination of "Public Supplies," a point was reached in the recent past when, "Special Supplies" having absorbed practically all the wagons available, the Coal Transportation Officer and his Advisory Committee deemed it desirable to reserve certain days for "Public Supplies." At that time the position was this. There had been a certain amount of over-authorisation, but it was not intended to discriminate so much between "Special Supplies" and "Public Supplies," as between collieries which could load half rakes and collieries which could not. Under the system of wagon distribution supplies authorised in half rakes of 25 wagons carried preference over supplies authorised in smaller lots, and of course over unauthorised supplies also, with the result that after meeting indents for half rakes there were practically no wagons left over for distribution among the smaller collieries. In those

circumstances it was decided to reserve six days a month exclusively for supplies to the smaller collieries.

(To Mr. Legge).—By “large units” at the end of my reply to question 6 (a) I mean rakes or half rakes or units of 20 wagons. This would mean that export would be confined to collieries with sidings for 20 wagons, *vide* the last note on page 9 of Annexure B. But railways are pushing on with the extension of sidings on the coalfields. While I advocate units of 20 wagons, I would agree that the units should be split up among adjacent collieries but I have not considered how few wagons might be allowed to each colliery. I am approaching the matter from the point of view of the unit in the marshalling yard and not so much from that of facility in working colliery-sidings. I agree that if the unit is split up among various sidings it does not expedite supply of wagons to or their clearance from the collieries. The effect of the unit system on the wagon supply of small collieries would depend on whether they became shippers; in practice I gave a small colliery wagons to its full capacity for shipment, *e.g.*, a colliery that could load 9 wagons got 9 wagons. The proposals as to units would not affect them adversely.

(To Mr. Legge).—As regards the question why the large units should not be controlled by the railways as used to be done up to 1916, it is felt that it would be preferable to have an independent authority holding the balance between consumers. If only shipment coal were concerned, it would be quite simple for the railways to do it, but the problems of shipment coal and general coal overlap.

(To Mr. Banerjee).—Control as such, by the authorization of large units tends to lessen difficulty in the marshalling yards, but if control were extended I should also assist by the authorisation of small lots.

(To the President).—In the statement of sidings on page 9 of Annexure A, the figures are progressive. They refer only to the two big coalfields, Jharia and Raniganj, served by Asansol, Dhanbad and Adra.

(To Mr. Banerjee).—As regards the maximum handling capacity of the East Indian Railway and the Bengal-Nagpur Railway apart from the assistance given by the use of rakes and half rakes I would refer to page 5 of the Annexure A, which assumes however, ideal condition of distribution and loading. It may perhaps be true that the Bengal Nagpur Railway and the East Indian Railway have a capacity of 15 million tons per year without the Coal Transportation Officer, but they certainly have not without rakes and half rakes.

My meaning in the first paragraph of my written reply is that, while only good quality coal should be sent down to the docks for shipment, I do not say that facilities for despatch should be given on the basis of the quality of the coal. I am not proposing to take away the rights of the buyers to buy or the sellers to sell any quality of coal that is really wanted.

8. Railway Freight.—The correspondence about rebates to which I refer in my written reply goes on sometimes to my knowledge for six weeks before any payment is made: if there is a definite reduced rate for shipment coal the shipper knows where he is. I have known cases where the delay was 3 months but even the railways admit to six weeks.

(To Mr. Legge).—I do not agree that, if a general reduction is made on rates for shipment coal, other coal traffic can claim the same rates as shipment coal. Nor do I agree that traffic for shorter distances could claim lower rates on the basis of any such concession.

(To Mr. Banerjee).—As to prepayment of freight I am speaking from my own experience in my remarks about petty colliery owners. To my knowledge small colliery owners booked coal to imaginary persons, sent the railway papers V. P. P., and when they were returned wrote to the railway asking for the coal to be auctioned. That was on the Central and South sections of the Eastern Bengal Railway. When the auction took place they bought the coal at reduced rates. There was a regular ring working this and we ascertained that colliery owners were mixed up in it. So bad did this become that rather than sell we simply destroyed the coal. I know nothing about

such practices up-country, but when I was in charge of the section dealing with rates and refunds I was partially responsible for bringing this prepayment system to a head. I brought cases to the notice of the late Mr. Purcell who at first opposed the idea. As regards this prepayment the larger collieries cover themselves but I know small collieries which not only give two months credit but finance the railway freight. This is a serious matter for them but from enquiries I find that most of the larger collieries find the rule quite workable.

(*To Mr. Banerjee.*)—As to my suggestion of lump sum rates for large consuming centres I consider that it would pay the railways to run large units to such places. I included Delhi because that town was quite a big consuming centre last year and will continue to be one: I base this opinion on applications received by me. Up-country mills would have no difficulty in combining to get rakes and half rakes. The congestion at Cawnpore which Mr. Banerjee quotes was due to too many rakes arriving there at one time: it does not affect the ability of consumers to take rakes and half rakes normally.

As regards the terminals I think personally that two annas ordinarily should suffice unless extra facilities are provided. (*To Mr. Legge.*)—I mean destination terminals.

(*To Mr. Banerjee.*)—As regards seasonal rates of freights I express no views. It is a fact that the Advisory Board to the Coal Transportation Officer suggested seasonal rates.

9. Work of Coal Transportation Officer.—Annexure A.—(*To Mr. Banerjee.*)—As regards the assistance given by the Coal Transportation Officer to export-coal I can only say that the principal shippers come to me for help. I know of no complaints my assistance having failed and having caused demurrage.

(*To Mr. Banerjee.*)—Under the proposed scheme, sanctions would be classified according to the size and importance of an industry, but I say in the note that it will be left to the Board to work out the details of the system. The Coal Transportation Officer would have powers to expedite the arrival of wagons from the colliery but I should not admit that the present system has failed to assist in this way: there have been delays but there would have been more without it.

(*To Mr. Banerjee.*)—We have worked only one scheme since I took over this post. We did our best to work the scheme put forward by the Indian Mining Association and the Indian Mining Federation, but within one month it was reported impracticable to work to every detail of it. However, we tried to meet the main objects of the scheme by the lines of work which we followed and I think we have given satisfaction to 95 per cent. of consumers.

C. Possibility of economies at the docks and coal depôts.

11. Improvements in handling wagons and results on costs.—(*To Mr. Stuart Williams.*)—I do not say that the present sidings are insufficient for the present traffic. I made only a cursory inspection but my impression was that the layout of the sidings could be improved. I have heard nothing of any scheme having been sanctioned for the expenditure of Rs. 5 lakhs on the improvement of the sidings generally in the docks.

12. Loading and shipping facilities.—(*To Mr. Stuart Williams.*)—In 1920 when facilities were far from sufficient, there were labour troubles and they had to rely on mechanical shipment. If there had been an adequate supply of labour there would have been no trouble.

13. Storage and stacking at docks.—(*To Mr. Whitworth.*)—When I say three days notice should be given by wireless, I mean three days before arrival at Sandheads. Adding two days for the ship to come up to the docks we get five days which should be ample if wagons were sent off promptly. At present we are not getting enough wagons down over the Bengal-Nagpur Railway because the ferry is giving a lot of trouble and wagons have to come down *via* Asansol.

(*To Mr. Stuart Williams.*)—As regards my objection to providing stacking space because the depôts might be sub-let, I am aware that stacking space at the docks is not let out to any individual firms. My experience on the railways is that depôt holders though forbidden to do so by their leases do allow the use of their depôts to others.

(*To Mr. Banerjee.*)—The objection to sub-letting even if the depôt were sub-leased by shippers, would be that the depôts should be given to *bonâ fide* shippers. On the railways, the difficulties arising from sub-letting have been on the commercial side of the transaction. I have no actual experience of the Shalimar and Howrah Depôts.

14. Facilities at Bunker coal depôts.—The reason for proposing a unit of 20 wagons instead of a half rake of 25 is that the normal load of a train leaving the coalfields is really 60 wagons and not 50 as was assumed when the half rake was fixed at 25 wagons. Taking 60 wagons we might as well have 3 units of 20.

(*To Mr. Legge.*)—Every depôt and every consumer should, if possible, come in, on the 20 wagon basis, by extension of sidings.

(*To Mr. Stuart Williams.*)—We shall no longer speak of giving rakes but we shall make the unit 20 wagons and allot to a colliery one, two or three units.

(*To Mr. Banerjee.*)—There is no objection to having a smaller unit than 20 except that the larger the unit the better the transportation. I know of the complaint that with large units loading of coal is not so good. I would invite attention to the annexure to my written statement.

F. Grading, inspection and certification of coal.

24. Grading of coal.—Grading by quality only would be all that is necessary for bunkering because there is no question of the bunker coal having to look attractive to the purchaser, as there is with the export coal which looks more attractive if in large lumps.

(*To Mr. Banerjee.*)—I have no idea what a screening plant costs.

सत्यमेव जयते

J. H. JENNAWAY, Esq., Manager, Colliery Department, Messrs. Martin & Co., representing the Indian Mining Association.

(*Oral evidence—January, the 14th, 1925.*)

General.—I have been for 18 or 19 years in coal in Calcutta; before that I had some civil engineering training at Home and eventually took up the commercial side of the coal business. I have never worked in a coal mine. My company have 13 collieries under their control, three or four of which are of medium size and the rest small. Their outturn is up to 60,000 tons a month. There are several of them on the Raniganj field.

Anything that I say is in general to be accepted as the aggregate opinion of the Association.

The number of colliery companies and individual proprietors in India is approximately 830. It is difficult to be more precise because small colliery proprietors are always changing. This figure is derived from independent sources and will not agree with that given by the Chief Inspector of Mines. He gives figures for concerns which come under the Mines Act: the other concerns are small and of no particular importance.

My Association has both European and Indian members, though Europeans predominate. I can get figures about this for the Committee.

The number of collieries by provinces in India is:

Bihar and Orissa	642
Bengal	317
Burmah	4
Central Provinces	95
Baluchistan	21
Assam	13
Punjab	48
North Western Province	1
	<hr/>
	1,141
	<hr/>

The number of colliery companies and proprietors who are members of the Indian Mining Association is 138.

(1) *Need for immediate action.*—I am of the opinion that a serious effort should be made to get back at least a portion of the market in Singapore and Colombo for Indian coal, even though only the best coal were exported; my reason is that it is necessary to have more markets to take up increasing outputs and also to provide other outlets for the coal which is likely to become available for sale on account of the diminished demand and of the purchase in the future by Indian railways of smaller quantities than in the past, owing partly to their own colliery development. To give Indian coal a chance to recover export-markets, I am of the opinion that some help is required, chiefly in the direction of lower railway freight to the docks, lower port and dock charges, and lower freight on long distance coal. At present, it may seem that there is little difficulty in selling the very best Indian coal in India itself at remunerative rates: but with decreasing demands the rates will continue to fall and it is possible that the consumption in India itself may only be sufficient to absorb first class coal, and that second class coal for the most part will then become almost unsaleable. At the present moment there is not much difficulty in selling good coal but we cannot rely on the continuance of this state of things. Coal like any other commodity must have a continuous market. In my view the demand at the present moment is diminishing in India and an export market is a necessity to take up our increased output. (*To Mr. Banerjee.*)—I have made no estimate of my own as to the extent of the internal consumption of India but rely on the figures from the Supplement to the Indian Trade Journal, November the 6th, 1924: though I am doubtful whether even these can be taken as strictly accurate. The whole thing is complicated by the question of the output of railway collieries. By first class coal in this connection I do not mean the very best coal but ordinary first class quality. I do not suggest that Indian industries should not have any good coal: my reply is conditional on export ceasing altogether: this would lead to a diminishing demand in India for second class coal owing to the surplus of coal available and all consumers would buy first-class coal at low rates with the result that second-class coal would suffer badly. I believe that export would help second-class coal inside India and so would help small proprietors. Export takes up the output and keeps up prices. I consider that it would be wise to make some effort at once to recover at least a portion of the overseas markets if only for the reason that it would put exporters in touch with conditions, prices, etc., in these markets; they would thus be in a better position to do export business and to increase it when and if exchange and steamer freights, etc., etc., become more favourable to the Indian exporters. In other words, they would be established in the markets. I recommend that an immediate effort be made because there is no time like the present and we do not know what is going to happen in the future. The bigger exporters now have still a certain

amount of export business and they have a chance of expanding it. The longer we keep out of the market, the more difficult it will be to get back: we have been out of it more or less since the embargo and we cannot afford to lose any further time.

(2) *Surplus of Indian coal suitable for export.*—Briefly, I am of opinion that a surplus of coal suitable for export will be available, and is to some extent available at the present time, and that, if a market were found, there would be a steady and regular supply of such coal. The question of price is a commercial proposition and I think the large firms possessing capabilities of producing large outputs of good coal can be trusted to deal with outside markets on an economic basis if they have a reasonable chance to compete. It should be borne in mind that for a long period, dating back to pre-war days, there was a considerable export of Indian coal to these ports, though there was always competition with other coals and the markets were fluctuating ones. I base this reply on what was done in the past, but I would remark that the Committee would do better to question the representatives of the Bengal Coal Company, who have always been able to do coal export business, on this point. In the past large quantities were exported and when I hear of stocks at the collieries I conclude that even now export is possible. Looking to the future I foresee, for the reasons already given, a decreasing demand in India. The State Railway collieries are going rapidly ahead and this means a loss and big loss to private industry: their opening has already affected the situation and matters will be worse before long. This makes other markets even more essential.

A. Possibility of economies in the coalfields.

1. **Reduction in cost at pit-head.**—(1) *Superior staff.*—The following statement shows the salaries of managers and superior staff:—

	1914.		1924.	
	per mensem		per mensem	
	Rs.	Rs.	Rs.	Rs.
Chief Superintendent	1,000	to 2,000	1,500	to 3,000
Managers, first class	350	to 600	650	to 1,000
Assistant Managers, second class, about	150		250	

Commissions on varying scales are also paid. I do not give comparative figures for inferior staff because they would not be properly comparable with those for inferior staff in South Africa.

I cannot say that the superior colliery staff is paid too highly, though the pay is higher on the whole than in pre-war days. There are some colliery officers drawing in all Rs. 4,000 to Rs. 5,000 per month. Even though the industry is in a depressed state very large salaries are being paid to consulting engineers in charge of a group of collieries or of a big colliery with many different pits: spread over all the collieries that they manage the charge might not appear to be excessive. Also there are relatively few such men. The extra cost per ton would be infinitesimal. (*To Mr. Banerjee.*)—Conditions vary very much with different companies. We have one fair-sized colliery with a General Manager, a Mines Manager and an Assistant Manager: here the name "General Manager" merely means that he is the chief manager and is in an executive position. He also does take charge of two other mines. He is well but not highly paid. In this case there is no increase in costs in consequence of his appointment except the ordinary increase in pay.

(*To Mr. Banerjee.*)—I cannot say that the pay of first-class managers has come down owing to there being more men available with first class certificates. (*To the President.*)—The figures which I have given above for pay are higher because the same men have had longer service. (*To Mr. Banerjee.*)—I am inclined to think that it would be possible to get men out on less pay now, but I am doubtful whether it would be wise.

(To Mr. Bell).—In my opinion to have a general manager means an ultimate economy. On some collieries the title is almost a courtesy title. In one typical case he is in charge of several pits, officially classed as different mines, of which he manages two small ones directly: of the others a first class manager manages a large one and two junior managers manage two others. In this case the general manager supervises the general commercial conduct of the affairs of all of them. In my opinion he has to be well paid and placed out of temptation or anxiety as far as possible. I have not come to an absolute conclusion, but I think that with groups of small collieries a general manager means economy. If a company has only one big colliery it should suffice it to have only one general manager on merely relatively high pay, *i.e.*, Rs. 1,000 to Rs. 1,500, *plus* commission, bonus, etc.

(2) *Raising costs.*—As regards raising costs, by which I mean the revenue costs of a colliery, I have a record of Rs. 4-2-9 per ton for an economically worked colliery on the Jharia field, excluding depreciation, reserves and income-tax and other charges which should come on afterwards and which may be put in all at Re. 1. These extras are less severe on a big output than on a small. The figure includes necessary Calcutta charges, but not income-tax or super-tax, directors' fees, auditors' fees, etc. I would repeat that the figures are for a cheaply worked colliery. (To Mr. Banerjee).—As regards corresponding figures for a colliery worked economically on the Raniganj field, my record of colliery costs is Rs. 4-8-5 and, with all costs in, Rs. 7 as against Rs. 4-2-9 and Rs. 5-2-9 for a similar colliery in Jharia. The reason why the total cost in the Raniganj field is higher is because the incidence of total charges on the smaller output is so very heavy and the output per colliery on the Raniganj field is smaller relatively than in Jharia. You have to divide the same amount for Calcutta charges, brokerage, etc., over a smaller outturn. (To Sir Rajendra Nath Mookerjee).—The actual over-charges in Raniganj are rather higher and something more is also paid for commission for recruitment and for tub rate.

(To Mr. Banerjee).—To give a figure for tub rate is difficult. In one place a man will cut for 7½ annas a tub, in another the same man would refuse 9 annas. In Raniganj labour is more difficult because there is practically no influx of labour. I am told that in the old days when the lower collieries were originally started they built up a labour force which settled on rich agricultural country, but when the Jharia field was opened labour was attracted away to easier worked coal. There are different rates for inclines and pits and in early days the work in Jharia was to a large extent practically quarry-working. In Raniganj there were practically no quarries and the coal was harder.

(To Mr. Bell).—The figure of Rs. 4-8-5 for a Raniganj colliery does not include depreciation. Probably Calcutta prices including depreciation reserves and income-tax would be Re. 1 more on the same outlay of cost. Of any two collieries of a similar size, one at Jharia and the other at Raniganj, the latter would be the dearer to work. I should mention that my figures are obtained from our own collieries. Raniganj coal is more saleable down country and for industrial use in Bengal, because (1) there is 14 annas in its favour as against Jharia on freight to Calcutta, and (2) the coal which is different in type from Jharia coal and high in volatiles is particularly good for steam-producing in stationary boilers. For this purpose consumers generally prefer it to Jharia coal. The extra cost of Re. 1, allowing for the railway saving of 14 annas, does not interfere with the sale of Raniganj coal.

(3) *Indian Labour.*—I am afraid that I cannot compare South African and Indian conditions. Indian conditions are different because the miner is an agriculturist and from the point of view of coal is only a casual labourer. Things may alter, but only if more mechanical work is introduced: we may then perhaps train some sort of a class of permanent mining mechanic. I do not know whether I can say that the costs of labour are unduly high in India as compared with those in South Africa, because I do not know under what conditions they live in South Africa: they may be given comfortable

compounds, quarters, etc., in addition to wages. In India the miner goes away and has a good time when he gets a good harvest and conditions are improving on the collieries with better housing and better sanitation. (*To Mr. Banerjee.*)—Indian labour works for only a part of the year. My opinion is that the miner takes money away with him from the mine when he goes home.

3. Effect of Legislation.—(*To Mr. Banerjee.*)—To try and state the amount of the loss that would result if female labour were prohibited would be in the nature of a prophecy. I do not think it would be practicable to prohibit it except very slowly by degrees and by stages. Absolute prohibition, if enforced suddenly, would produce chaos and seriously affect output. This is to be taken as my personal opinion only.

4. Possible savings in stacking charges.—If the wagon supply throughout the year were fully up to the demand, it would reduce considerably, if not entirely do away with, the necessity of stacking coal in large quantities. The necessity for stacking coal naturally arises from two causes:

(1) the wagon supply; and

(2) despatch orders at the colliery,

but, in the past, wagon supply has been the chief factor. It is quite likely, however, that it might be necessary to stack some quantity of coal during the first half of the year, as during that period, raisings, particularly in the Jharia field, are generally higher than during the second half, and there might not be a demand for the full quantity raised.

The amount stacked varies so much with different collieries. A very small proportion is loaded direct into wagons at the smaller collieries and the problem is not to avoid stacking altogether but to keep the stocks down to a reasonable figure. Personally I knew a colliery where in 1909, on a raising capacity of 25,000 tons per month they had 50,000 tons in stock and had to restrict raisings until stocks were absorbed. The proportion loaded direct into wagons might be as low as 50 per cent. for second-class Jharia, but not in Raniganj. (*To Mr. Bray.*)—In February when raisings are largest it is quite likely that even on the large collieries 50 per cent. would go in stack particularly on the Jharia field because outputs fluctuate very much more at that season. On the other hand during the low period all raising might be despatched if the raisings were low and the demand good. (*To Mr. Whitworth.*)—The output in Jharia shows a 50 per cent. drop in June as against February and it is not possible to avoid stacking altogether: you have to stack in the good months to average despatches throughout the year. It comes back to the question that we expect to sell a certain output, but our output is not regular. (*To Mr. Stuart Williams.*)—The raisings reach their limit in February-March and drop during the rains. Ordinarily if the demand is good they would show a more or less regular curve, but things are complicated by the wagon supply. (*To Mr. Banerjee.*)—As I have said the demand varies but my experience is that when the demand is good, if raisings are medium and wagon supply is good, you can get the coal away as it is raised on the Raniganj field, but not in Jharia. At times you run into stocks, not only in February but later also; for it rarely happens that a plentiful supply of wagons and a rush of orders coincide. In the latter part of the year the demand slackens generally but if you have railway contracts, despatches remain brisk. We have not sold our whole output to railways but have at times sold 60 per cent. of the output of a medium sized colliery and in my experience we can dispose of the other 40 per cent. on the Raniganj field, but not on the Jharia field. (*To Mr. Bell.*)—The railway facilities differ at Jharia and Raniganj and Jharia is much worse supplied: the reason is possibly that the siding accommodation and lay-out at Jharia has not kept pace with the large output, which has led to congestion: I would remind the Committee that 65 per cent. of the total output in India comes from Jharia. The collieries in Raniganj are widely scattered, there is no congestion and the output is small: so the same difficulties do not arise. What should be done to remedy the position of affairs at Jharia

is a question for the railways: it is up to them to do something more for us. My personal view is that though it would be difficult to bring facilities up-to-date in Jharia, it should be easy enough in Raniganj.

B. Possibility of economies in transport to Calcutta.

6. (a) **Improvement in wagon supply.**—(i) *Stabling in sidings.*—With regard to the suggestion that wagons should be distributed to colliery sidings as received and stabled there ready for loading instead of in marshalling yards, this may be rather more of a railway than of a colliery question and is put forward as a suggestion that has come to us. Possibly this suggestion is the outcome of what has in past times been the custom of the railways. When wagons have been plentiful and not required in other directions, they have been stabled in large numbers in colliery sidings. This certainly did not, and would not, at any time imply an entire absence of any system of distribution; for, though the wagons were stabled in colliery sidings, they were not available for loading at the colliery until such time as the railways notified them as being at the colliery's disposal for loading, and the regular time for loading wagons as per the railway rules applied whether wagons were stabled in colliery sidings or in marshalling yards. From the colliery point of view, it is essential that the supply of empties should be made at regular hours and time be allotted to insure day-light loading. Unless more wagons are available than could be put into the marshalling yards it will not help: I think that is the position. The railways would not consider it as a system but they might do it when there was a surplus of empties. (To Mr. Legge.)—There would be no objection to stabling them then.

(ii) *Irregular supply of wagons.*—(To Mr. Legge.)—If it is a fact that the reason why wagons come late to the sidings is because the pilot waits for empties to reach the marshalling yard and if the number of wagons allotted each day necessarily includes some which are only expected to arrive in time for distribution but have not actually reached the yard, I should rather have facilities for moving the greater quantity of coal if I were asked to make a choice between a regular supply of a few wagons or an irregular supply of more. The degree of regularity comes in. I am thinking in terms of my own experience: on one of our collieries in Jharia we got five wagons one day, none on the next, 10 on the next, 50 on the next. I am referring to the number of wagons rather than to the time at which they come in. (To Mr. Banerjee.)—So long as the wagons are placed, so as to allow daily loading, little variations in the time and supply do not matter very much. (To Mr. Legge.)—Managers do complain about small details such as, in particular, the habit of noting on the pilot's note the time of leaving the yard and not the time at which they reach the colliery, but that sort of thing is only a question of a little more supervision.

(iii) *Weighbridges.*—(To Mr. Legge.)—As to weighbridges I do not support the idea that each colliery should have its own. For a small colliery with several sections it would be far too expensive because several bridges might be needed. As regards big collieries it depends on how many bridges each would need: at a very big well-run colliery it might be a distinct advantage. I might note here that it would be essential to arrange that the weights shown at such a weighbridge should be treated as railway weighments because otherwise there might be disputes with customers who buy on railway weights. I see no way of working such weighbridges unless the railways themselves do it. The large colliery companies which want them must pay a certain proportion of the cost. English collieries have continuous despatch: they do not stack and when they cannot despatch they stop raising.

(To Mr. Banerjee.)—I cannot answer in detail about the times when wagons come in. My opinion is that Raniganj can usually manage day-light loading, but Jharia not always: in the Jharia section itself they might manage it usually but not on the Kusunda section. But I do not doubt that these little troubles can be got over. Variation in supply merely means variation from the normal.

(iv) *Pilfering*.—I do not know of any records which go to show that the appointment by the East Indian Railway of a special officer to reorganise their watch and ward staff has had any effect with regard to the prevention of pilferage but I am inclined to the opinion that more supervision and activity on the part of watch and ward staff has been necessary. That is to say it has proved necessary because of the large amount of pilferage that went on: the results seem to show that supervision before that was inadequate. This is mainly a general railway question: other trades also suffer from it. (To Mr. Banerjee.)—I have no recollection of the Association having applied for a watch and ward staff at Shalimar dépôt.

6. (b) *Their influence on costs*.—The reason why I am of the opinion that rapid handling of the wagons, which should imply the supply daily of a sufficient number of wagons for the colliery's requirements, would reduce the cost at the colliery, is that, if provided with good contracts, it would be handling the coal practically as raised. The loading staff would tend to become more efficient, screening plants would be properly utilised, and large stocks on ground would be eliminated. It is a question of handling a production expeditiously to the consumer and turning over the results of industry as quickly as possible. I mean that if you deliver coal from the mine direct to the wagon and from the wagon direct to the consumer it must make for economy. We say the savings would be some annas a ton because it must necessarily be indefinite, but I think that it would mean a considerable saving. We want better organisation and quicker sales. (To Mr. Banerjee.)—"Rapid handling" is a general phrase: the more rapidly the wagons are handled on the railways, the more rapidly they will get back. Quicker handling implies fewer stoppages. If the coal going down runs right through to the docks it suffers very little by theft in my experience, but the coal going, for example, to the mills, through congested districts suffers badly.

7. *Type of wagons*.—We have no screening plant at our collieries. For such a plant open wagons are in my opinion essential. It might be possible to get roll-top wagons: for covered wagons do reduce pilferage. (To Mr. Banerjee.)—I think there is nothing wrong with our written reply. The up-country buyer wants covered wagons, but he has to take what he can get. For the Howrah dépôt we should like wagons suitable for shoots, but I am out of touch with Howrah nowadays.

8. *Railway freight* (c) *Grounds for reduction*.—It is difficult to give facts and figures in support of our recommendation that railway freights and port charges should be brought back to pre-war level. It is, however, a fact that, under the old scale of railway freights and with lower port charges, a considerable shipment business was handled. The question whether the same factors which prevent reduction in cost at pit-head to pre-war level also prevent a similar reduction in the case of railway freights and steamer charges, does not seem to me exactly to apply, as the railways and port trusts are not traders in the same way as are the colliery proprietors. They are in possession of certain rights, privileges, and monopolies and do not have to struggle for markets as the traders do. It would seem that they, being in the position of public services for the benefit of all concerned, should do their utmost to promote the trade and industry of the country, and particularly so important an industry as the coal trade. Regarding collieries reducing their charge for coal, our charges have been considerably reduced during the past two years. The acceptance of a reduction by several important collieries of even the contract rate of coal for the railways is a case in point, but, as collieries (i.e., the collieries worked by private industry) have to rely on profits for their existence, they cannot but view with the greatest misgiving a continual fall of prices which must eventually tend to the reduction of a considerable part of the coal output and to the complete extinction of output from many existing collieries, particularly small ones. In fact the railways are partners in the coal industry and should help the industry through its bad time. Moreover, the railways would benefit if the export market were recovered now because otherwise when the

State collieries start working they would squeeze out many small collieries, and the railways would be short of traffic.

(ii) *Flat rate for export coal.*—(To Mr. Legge.)—Humanly considered I think that the Raniganj people might object to the suggestion for a flat rate for export-coal from Raniganj and Jharia. The Raniganj field has an advantage in certain markets from the lower freight just as Jharia has in up-country. If there were a flat rate for shipment-coal only, I think it would be an advantage provided that it was the same as the lowest Raniganj rate and there would be no objection except that the Raniganj people might want a further reduction.

(iii) *Seasonal reduction of freight.*—(To Mr. Banerjee.)—I would favour any reduction, seasonal or otherwise. It might help in getting the consumer to stock in the slack season: it is entirely a financial question and cheaper transport at certain seasons might induce a consumer to buy them.

(iv) *Re-opening of collieries shut down.*—As regards the prospects of a colliery being able to reopen quickly once it had completely shut down, it might take a considerable time if it were an old colliery with dip workings, but some of the smaller ones might open relatively quickly. I agree that we should try to prevent the closing down of collieries.

(v) *Loss in weight in transit.*—As regards loss in weight in coal sent to Howrah and Shalimar for bunkering I have done no bunkering for five or six years and cannot give figures. As regards the Bhadreswar ghat depôt, my recollection is that the loss was something over 5 per cent., but the coal concerned was fuel coal which had to be boated across the river and stacked in bins and the loss was calculated on the measurement in the bins. As regards shipment coal, in my experience the loss in weight ran to about 2 per cent. up to the time of being loaded on the steamer and you will have to add something for loss on the steamer's outturn which might bring the figure to 4 per cent., but I have been out of export so long that I should not like this figure to be taken by the Committee.

(vi) *Despatches from Central India.*—(To Mr. Banerjee.)—I have personally no experience of despatches from the Central India coal fields.

(vii) *Sidings.*—(To Mr. Banerjee.)—We are waiting for sidings to be put in at several collieries, namely, Moira, Ratibati, Samla Manderbonk and Radhamadhabpore which is a portion of Ghusick, and which has a coal suitable for export eminently: the Samla coal is suitable for export except during the four hot months. I cannot say how long we have been waiting for sidings.

(To the President.)—One of the reasons give for delay was the financial difficulty and another is that there is a long waiting list: possibly one unavowed reason would be that the railways are not sure that they want any more sidings because they find it difficult enough to handle the traffic from those already in existence.

C. Possibility of economies at the Docks and the coal depôts.

13. *Storage and stacking at docks.*—The 3,000 tons to 5,000 tons per berth, which should in our opinion be provided for storage free of dumping charges, would not necessarily represent 40 per cent. of each vessel's cargo: it would more or less provide a reserve for rapid loading of steamers as they arrive. The main point is to release wagons rapidly and on a steamer's arrival to be able immediately to commence loading. But I should like questions on this point to be put to the people who are now doing shipping: I have done none for the past four or five years. (To Mr. Banerjee.)—I think that possibly quicker loading might induce steamer companies to lower their freights. This might be more likely if exporters in Calcutta were considerable buyers of freight, that is, if they chartered many steamers as they used to do, but they are not large buyers of freight nowadays. It would depend on your being able to induce tramp steamers

to come here. This is again a question of my being out of the export market.

14, 15 and 16. **Bunker coal.**—(To Mr. Banerjee).—I have no personal experience of the dredging near Shalimar or Howrah. I do not remember any complaints about the increase in municipal taxes and I know nothing about the value of land in Shalimar.

B. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—The opinion that the best qualities of Indian coal are equal to imported coals, (i.e., South African, etc., excluding best class Welsh) has been obtained from various sources.

(To Mr. Banerjee).—By best qualities of Indian coal I mean selected Jharia and Dishergarh quality.

19. **C.i.f. prices.**—The details of figures relating to our reply to Question 19 were arrived at as under:

	Rs. A. P.
Coal	8 0 0
	Rs. A. P.
Railway freight	4 8 6
Less rebate	1 0 0
	<hr/>
	3 8 6
Loading	0 8 0
River due	0 8 0
Wastage taken at 2 per cent. on 12/8	0 4 0
Insurance (a low figure)	0 2 9
Inspection	0 0 9
	<hr/>
	5 0 0
	<hr/>
	13 0 0

Cost of finance and agency is not included in the above.

	Taking steamer freight at Rs. A. P.	The C.I.F. prices work out as follows. Rs. A. P.
Madras	5 0 0	18 0 0
Colombo	5 8 0	18 8 0
Bombay	6 8 0	19 8 0
Karachi	6 8 0	19 8 0
Rangoon	5 0 0	18 0 0
Singapore }	6 8 0	19 8 0
Penang }		

(To Mr. Banerjee).—Four annas for wastage is on the assumption that the shipment-coal will be run straight down into the docks. Insurance at 2 annas 9 pies would not always be obtainable; it varies a little in the hot months; but I think it could be obtained generally. Commissions for effecting sales would not be shown separately. (To the President). Finance and agency are such variable factors that it is useless to estimate the details of them. So far as I remember, the agency charge is less when selling to Karachi than when selling to Bombay and this again is less than when selling to Singapore.

20. Prices.—The information on which our reply to Question 20 was based was probably not sufficiently up to date. It has since been established that the prices at which competing coals are selling at the ports compete disadvantageously with Indian coal. With regard to the question of Indian coal not holding its own in Singapore, Penang and Colombo; it has to be remembered that there has been an actual loss of market, and that other suppliers have obtained a very firm hold of these markets; possibly one of the reasons being that a good many forward contracts have been entered into. The same reasoning may also apply to the Bombay and Karachi markets. Exchange at the present time enters into the calculation and it seems to be established that South African coal enjoys preferential treatment in its own country which enables it to compete in overseas markets. By "preferential treatment" I mean a substantial rebate and the fact that they have not to face the competition of any outside coals in their internal market. (*To Mr. Banerjee.*)—I cannot quote to-day's prices for South African coal.

21. How competition can be met.—(*To Mr. Banerjee.*)—If asked what Indian coals able to compete with South African coal, price for price, could be put on to the Bombay market, I should suggest a judicious mixture of first class Jharia and ordinary first-class Raniganj, say half and half. By ordinary first-class Raniganj I do not mean necessarily what might be classed as super-qualities, viz., the Dishergarh, Sibpore and Paniati coals. I cannot give the present prices, because the market is so irregular, but nominally first-class Jharia is round about Rs. 7 and Dishergarh Rs. 10: I am inclined, however, to think that business might be done for less. I shall not hazard an opinion whether at present prices we can compete in Bombay with Natal coal: for that is precisely the question that the Committee has been appointed to answer. We may be compelled to compete, even below cost price: this cannot go on indefinitely but with a little help and resting a little on the strong arm of the State I think that, since prices are not fixed for ever,—or rather I trust that eventually we can pull through against South African competition. To say "Yes" or "No" to the question whether we can now compete does not seem to be commercially possible. I suspect that South African coal is now being sold at cost price and that they are keeping their turn-over up by what they sell in their own country where they are free from competition. The point to remember is that the market is sure to fluctuate and give us a chance of getting in against Natal coal, just as used to be the case when we were competing with other coals in the Malay States years ago.

F. Grading, inspection and certification of coal.

24. Grading of coal.—Our reply is intended to convey that the grading of coal intended for export would be of the coal despatched to form the cargo of a steamer, i.e., shipment or export coal when the grading would also apply to the coal taken on by the steamer at the Docks for its own bunkers. With regard to bunker coal generally, we are doubtful of the feasibility of grading coal for the bunkering of the sundry steamers which visit the port of Calcutta, as these are supplied from various depôts and various firms in Calcutta who often have stocks of mixed qualities. It would only be feasible satisfactorily to grade bunker coal if all bunker coals were supplied from recognised depôts holding stocks of graded coal. Ordinary bunkering business is of an emergent nature. All bunkering is done from Howrah, Shalimar or Garden Reach by boats and the bunker coal has to be loaded at any time which suits the steamer. On the other hand a steamer which is loading export coal at the docks can bunker with similar coal from the wagons. Grading should be voluntary and if a skipper wanted graded bunker coal he could ask for it: but I am rather of the opinion that unless we alter the present arrangements for bunkering it will be impossible to grade the bunker coal.

Whether the Re. 1 rebate to be given to export coal should be confined to certificated coal is a difficult question. Personally, I do not think so.

When a man is selling cheap coal and taking his risks would it be fair to penalise him because he does not fall in with the grading system? If, however, "certificated" does not mean that the coal is to be up to a certain standard, my feeling is that it would be well to have all cargoes certificated; that is my own feeling and a good many large firms, not only colliery owners but merchants also, would accept that view. I think that it might be for the general good of the trade that the rebate should be restricted to the certificated coal because there is no reason why the export of inferior coal should be given direct encouragement.

25. Classification into grades.—(*To Mr. Banerjee.*)—I speak of "Dishergarh quality" because coal has been so classified by the Chief Mining Engineer and the term is more or less accepted. It signifies to my mind the well-known Dishergarh coals and all such similar coals like Paniati and Sibpore, etc. If the word "quality" is omitted people who might be given Sibpore coal would object that it was not Dishergarh. For this reason I think that the classification cannot be in better hands than those of the Chief Mining Engineer because he has had the control of purchases on a large scale and has always taken samples and so knows all about the different coals. When you ask whether grading should be on the theoretical or commercial value of the coal, I should say chiefly on the theoretical value (for how can you know beforehand exactly what the commercial value is?) but this will have to be modified by taking the opinion of combustion engineers, because, to quote an example, 14-seam is at one place and in certain collieries a very good coal, absolutely first class, but elsewhere is inferior. I do not consider that the theoretical value of Dishergarh is similar to that of second class Jharia. The great point about Dishergarh coal is that it is homogeneous. I would like to amplify these remarks by saying that the calorific value, as taken from analysis, will have to be considered on an analysis made of coal taken from a cutting of the whole worked portion of a seam and taken by an impartial person: many analyses which are produced by collieries have not been so obtained.

27. Control of grading.—We could certainly suggest that the Government official acting as Chairman of a Grading Board should be the present Chief Mining Engineer, as we consider that he is the most suitable person. I would amplify this by saying that, apart from personality, the Chief Mining Engineer has a permanent department which is in touch with and has a knowledge of practically every coal in British India. In view of the possibility that there might be complaints about too much official control, I agree that the coal trade might do well to aim at having eventually its own organisation, but meanwhile it should use the Chief Mining Engineer's organisation. That suggestion has a great deal to be said for it. You might lay down that the Grading Board should have a term of three years.

(*To Mr. Banerjee.*)—It is not necessary, but it is very desirable, to have an official Chairman: till the trade gets its own organisation for the whole of the work, the Chief Mining Engineer should be the Chairman. I rather favour the idea of having a Government certificate for coal because a Government certificate carries definite weight: it used to be the same in Australia some years ago where Government certificates were given for other commodities like sleepers. People outside Calcutta would recognise the certificates if they knew where they came from. It is to be presumed that the buyer knows what he wants: he would have information about what the various qualities mean and the certificate would show what was the quality of the coal sold to him; and besides that sellers give a certain amount of information when they offer coal to any one. If the Grading Board certified a coal which afterwards turned out to be inferior, I suppose that the buyer would try and get satisfaction from any one whom he could reach, whether the Board or the seller: but the certificate would not be so framed as to give him a ground for action against the Board.

28. Inspection and certification.—(*To Mr. Banerjee.*)—I agree that inspection might be left to the buyer and the seller for rail-borne coal, but that

would not work for export coal. If we had certificates of grading, the standard of knowledge of Indian coals in foreign ports would improve and it would eventually be to our benefit.

30. Meeting of cost of grading and inspection.—We suggest the fee per ton for inspection and grant of certificate should be approximately the same as is paid to the Chief Mining Engineer's Department of the Railway Board for inspection of coal for railways and Government departments, i.e., 9 pies per ton. (*To Mr. Banerjee.*)—I have made no estimate of the probable expenditure of a Grading Board.

31. Sale on analysis.—The opinion that the irregular supply of rolling stock is the chief factor in preventing sale on analysis, when large quantities of coal are in stacks, is the opinion of our Committee though I am not quite sure of it myself. Generally speaking a better wagon supply would remove many of our difficulties. Supplies of wagons are very irregular and the coal trade is treated as a seasonal trade which is an unhappy state for any industry. I do not think that any collieries in any part of the world work on these lines or have to stack as we have to. (*To Mr. Banerjee.*)—Analytical results would differ for fresh and stacked coal a little, probably, on moisture. I think the only true analysis to be considered is that taken from a seam below ground, sealed and then analysed: you can then avoid all the variations which might result from the coal having been stacked on the surface exposed to the sun and rain.

G. Pooling of coal.

A general remark which arises out of this section is that the coal trade is suffering from lack of combination. I wholly agree with the view that more combination would be an advantage, but there are so many elements in the coal industry that combination seems hopeless. I do not mean any combination to keep up prices but a combination for the general good of the trade.

INDIAN MINES MANAGERS ASSOCIATION.

WRITTEN STATEMENT.

A. Possibility of economies on the coalfields.

1. Reduction in cost at pit-head.—We consider that there is not much scope for reduction in the cost of coal at the pit-head. Owing to the scarcity of labour and absence of any control over them by legislation or otherwise, it would not be practicable to reduce the wages which form a large part of the cost.

A slight reduction may, however, be possible by eliminating services which are merely duplication of duties, where such exist and also by some relief in taxations.

Better siding facilities to collieries not provided with such, will go a long way towards reducing their costs.

2. Effect of recent increase in wages.—The general allround increase in the cost of production is 50 per cent. and over. Of this nearly three-fourths may be accountable to the recent increase in wages alone. Worked out in actual figures it would come to an increase of annas 10 to annas 14 per ton of coal raised in wages alone.

It may also be remarked that increased wages have led to a reduction in the raisings and a consequent increase on the production cost.

3. Effect of legislation.—The cost of production has already increased and continues to be on the rise owing to the requirements of recent and proposed legislation. The increased establishment under the new Mines Act, the

housing and sanitation improvements under the Bye-Laws of the Board of Health, the Jharia Water Board requirements and the Workmen's Compensation Act, etc., have combiningly increased the cost of production to a figure which may be variably estimated at from annas 4 to annas 6 per ton.

Various other legislations are being proposed such as the restrictions on the employment of women underground, and if these ever come about, they will increase the cost of production very largely.

4. Possible Savings in Stacking charges.—In collieries not provided with high banks and spacious loading accommodation the saving would be anything from annas 6 to annas 8 per ton on all coal loaded direct into the wagons.

Stacking reacts adversely on the raising and leads to much loss of time in the handling of tubs, and returning them to the working faces. A large number of tubs have often also to be detained for re-loading. We have also to provide extra labour for stacking with consequent expenses.

5. Wastage from Stacking.—By stacking there is great loss due to disintegration and deterioration of coal depending on the weather conditions and a consequent loss of round coal. Other wastages may be due to theft, fire and rain. When stock accumulates there is less check on the raisings. Owing to these causes the loss in stacking would be from 20 to 30 per cent. of the coal stocked in a season.

B. Possibility of economies in transport to Calcutta.

6. (a) Improvements in wagon-supply.—We suggest the following improvements:—

Fixed time for supply and drawing out of the loaded wagons preferably early morning.

More loading allowance in weight.

Less wagon restrictions.

There should be small stabling yards near about to each section or group of collieries, where wagons should be stabled as received, and distributed to the collieries in proportion to their requirements, the allotments being made by an officer at the yard instead of from the District Headquarters.

There should be a free distribution of wagons on a *pro-rata* basis system, and all classifications of supply should be removed retaining only a certain preferential allotment for shipment coal.

(b) Their influence on costs.—Such improvements will undoubtedly lead to better supply and more despatches from the collieries with a consequent reduction in the cost. There will be saving in stacking charges and less detention to ships.

7. Type of wagons.—We suggest open tipping wagons and wagons with bigger tonnage for carrying export and bunker coal.

8. Railway freight.—Since 1920 the freight on coal to the docks and the depôts has increased to the extent to about Rs. 1-8-0 per ton. In order to help export this increase in the freight should be cut down immediately.

9. Work of Coal Transportation Officer.—As we have suggested a free distribution of wagons, we do not think it necessary to retain the services of the Coal Transportation Officer whose control is complicating wagon supplies.

F. Comparative merits and prices of Indian and other coals.

18. Comparative merits.—We consider that good Indian coal can compare favourably with most foreign coal now imported into India.

21. How competition can be met.—By protective tariff, the grant of rebate in freight and a suitable bounty on all coal exported abroad. We also suggest that only good Indian coal of the right quality should be shipped, and the best attention should be paid to the loading at the pit-head.

22. Possibility of new overseas markets.—We suggest that all markets previously held by Indian coal but now lost should be regained.

23. Special assistance to other coals competing with Indian.—On Natal coal there is a rebate of freight to the extent of 7s. 9d. per ton of 2,000 lbs. British coal also gets similar concessions.

F. Grading, inspection and certification of coal.

24 to 31. Grading of coal, etc.—We do not consider that grading and certification in the strict sense is absolutely necessary, and we think that if adopted it is bound to raise the cost of coal. Besides a kind of classification depending upon the calorific value of coal already exists. As the main idea is to avoid bad coal from being shipped abroad, we suggest that there should be licensed shippers who, being very well conversant with the quality of coal being worked in different mines in India, should purchase only such coals they may be required to do by a duly constituted board composed of practical and technical mining experts nominated by the Indian Mining Association, Indian Mining Federation, Association of Colliery Managers in India and Indian Mine Managers' Association and under a guarantee of quality by collieries, based on the calorific value of coal being supplied by them, as determined by the analysis. The Board, which should thus be representative of the trade with their own chairman being entirely free from any official control, should grant licenses and guide shippers as to the quality of the coal to be exported to different markets and can in turn be guided by the quality and price of coal being imported to or in demand at any particular port.

Collieries supplying export coal should have test certificates from authorised test houses copies of which will be supplied to the shippers on demand. The Board, however, should have the power to test the authenticity of the certificates or test the quality of coal by analysis through one of the Government bodies having control over the collieries. Shippers however, should be made responsible for the purchase of the proper quality of coal, and could be charged a fee for the grant of license by the Board.

G. Pooling of coal.

32. Practicability of pooling, and its effects.—Pooling may be desirable but it is a matter of mutual agreement amongst a group of collieries working the same quality of coal. It will obviate delays in the loading of ships to a large extent.

33. Effect of improved facilities on pooling.—We do not consider that pooling will be necessary if there is an adequate and steady supply of wagons and additional facilities are provided at the docks and coal depôts.

34. Compulsory versus voluntary pooling.—Compulsory pooling might in some cases benefit the smaller collieries if the prepayment system of freight is abolished, but it is again a matter for the coal owners to decide.

B. K. BOSE, Esq., Manager of R. B. Sirkar's Kirkend Colliery, Kusunda and B. K. Roy's Ganshadi Colliery, representative of the Indian Mines Managers Association.

(Oral Examination—Thursday, the 8th January 1925.)

These two collieries raise respectively 3,000 tons and 5,000 tons per month.

My experience of the coalfields dates from 1915 and I have been a Colliery Manager since 1919. I got the theoretical part of my training at Sibpur College and the practical part on the coalfields.

General.—My association is newly started and has now about 100 members holding first class certificates and several second class certificate holders also. All the members of my Association are Indians.

(*To Mr. Whitworth.*)—Most of the collieries which work first class Jharia coal have done a certain amount of export in the past and most of my associates are therefore acquainted with this business. I cannot say how much coal has been exported from the collieries managed by associates of mine. Their collieries are not doing much shipment work this season.

A. Possibility of economies on the coalfields.

1. Reduction in cost at pit-head.—My idea is that the average raising cost on the Jharia field would be from Rs. 3-12 to Rs. 4 per ton in a colliery raising from 3,000 to 4,000 tons. (*To Mr. Bray.*)—This figure refers to pits as well as to inclines. I should put the figure for collieries in Raniganj at 4 annas more. It includes all managing charges and would therefore represent something more than the bare colliery cost. (*To Mr. Banerjee.*)—This figure includes Calcutta charges. In giving it I am thinking of mines managed by Indians. It is possible that some collieries have higher costs for raising but that is my idea of what average costs are. (*To Mr. Whitworth.*)—In European-managed collieries the cost is higher in my opinion. The reason would be that both salaries and management costs are higher in such collieries. For example in Indian collieries you have Indian Managers and no one else, but in European collieries besides the actual Managers you have the Agents, the General Manager, and a number of Assistant Managers. The difference in the cost would be Re. 1 per ton, not more than that. (*To Mr. Stuart Williams.*)—This figure of Re. 1 is after making allowance for the larger output that results from European management.

(*To Mr. Bell.*)—My figures for raising costs would thus be—

	Jharia	Raniganj
	Rs. A.	Rs. A.
Indian	3 12	4 0
European	4 12	5 0

These figures include all charges except depreciation and commission on sales, i.e., brokerage. I cannot say how much the commission on sales would be because that is a point which is managed by the owners; it might possibly be two annas or four annas. The figures do include not only taxation but taxation on profits. A few Indian mines have managing Agents.

The duplication of duties to which we have referred in our written statement is of this kind. Most Indian owners keep their own men on their collieries to look after the Manager's work and to check the general management. These men have no technical knowledge but they are the men who control the mine and where they are employed the Managers have no power. Any developments which the Managers wish to suggest have to be approved by these men before they are taken up by the owners. If they were removed not only would their salaries be saved but there would be economies consequent upon more efficient management. Of course the total saving would be comparatively slight on this account. The reason why these men are employed is because the Managers are not sufficiently trusted. They are called sometimes the owners' representatives and sometimes Superintendents. (*To Sir R. N. Mukherjee.*)—I am positive that if these Superintendents were abolished we could reduce costs. We have not brought this fact to the notice of our owners but our Association intend to represent it shortly to the Mining Federation. The Superintendents manage practically all the work of the mine and you have assistants going to them direct for orders instead of approaching the mine's Manager.

(*To Mr. Legge.*)—The control over labour by legislation to which we referred in our written reply would represent something like the control that is exercised over labour at the Tea Gardens as I understand.

(*To Mr. Banerjee.*)—Where sidings are at a distance from pit-head the cost of transport varies from eight annas to twelve annas per ton by cart and from four annas to six annas by tramway. On some of the smaller collieries in the Khanudi section the cost would be as much as Re. 1.

(To Mr. Banerjee.)—As regards overhead charges there have already been reductions in the wages of Managers. In 1919-20 a first-class Indian Manager usually started on a salary of Rs. 500 to Rs. 600: now they usually start on Rs. 400. The corresponding figures for European Managers would have been slightly higher in 1919-20, or about Rs. 700 or Rs. 800. I am not sure if their pay has come down lately.

2. **Effect of recent increase in wages.**—I say the increase has been 50 per cent. and over because in 1919-20 the cost was about Rs. 2-8 per ton while now it is about Rs. 3-12. I can give you the actual heads under which there has been an increase.

	1919 per ton.	1924 per ton.	Increase per ton.
	As. p.	As. p.	As. p.
Coal cutting and loading into tubs	9 0	12 0 to 13-6	3 0 to 4-0
Hazris (daily coolies labourers)	1 9	2 6	0 9
Trolley men, etc.	2 3	3 6	1 3
Loading coolies on surface	1 6	3 0	1 6
		(2 0 to 4 0 really)	
Khalasis, firemen, engine men	1 0	2 0	1 0
Recruitment	1 0	2 0	1 0
Establishment	4 0	6 0*	2 0
Main galleries, dyke cutting, brick making, etc.	2 0	4 0	2 0
		TOTAL	12 0 to 13 6

* This is a low figure, in other collieries it would be 6 annas to 8 annas.

These headings do not cover the whole cost of getting coal. You must add cost of stores, head-office expenses, royalties, etc. The heads represent wages only. (To Mr. Stuart Williams.)—There was a slight increase before 1920. It was mostly on the actual cutting. Previously coal cutters were paid 5 to 5½ annas per tub, but in 1919-20 they were being paid about 6 annas per tub, i.e., about 9 annas per ton.

(To Mr. Bray.)—I should say that it would be impossible to reduce the wages. If it were possible it would be advisable. The attempt would lead to trouble and would disorganise the labourers who being mostly cultivators can afford to go on strike for longer periods than labourer in other lines.

(To Mr. Bell.)—The increase in wages of coal cutters has not led to an increase in output: it has led to an actual reduction. We are getting fewer days per week from our labourers and are faced with the double loss of having to pay more money in wages and of getting reduced output.

Wages in South Africa at Rs. 30 to Rs. 45 per month for a 48 hour week are very high as compared with wages on the Indian coalfields, where the average earning of a miner would be Rs. 4-12 per week of 45 to 50 hours. It varies from Rs. 3-8 to Rs. 6. He does not always work 4 days a week though some kinds of miners do more. Santhalis for example work for 5 days and will stay down 9 hours a day. They do not work during the whole time that they are down. It is not correct to say that they work for only an average of 3 days a week: they do not work on Sundays and Mondays, and on Tuesdays they do not work hard, but they work a full day on Saturdays. (To Mr. Whitworth.)—I should say that they do the equivalent of three days full work in the 5 days but I keep no record of the actual hours of work. They work from 5 to 6 hours at most per day. While the cutter is working the loader is resting and while the loader is working the cutter is resting. I should say that the actual work occupies not more than 30 hours a week.

Miners are paid on contract and get 8 annas for each tub loaded. They will load two or three tubs per day and earn from Re. 1 to Re. 1-8. This is earned by a miner and a loader jointly. (To Sir R. N. Mukherjee.)—When they have finished two or three tubs they stop work for the day.

3. Effect of legislation.—(To Mr. W. C. Banerjee.)—The result of the prohibition of the employment of women would be that the present system of work would be broken up. Now the miners work in family groups: if women were not employed the men would have to work by themselves and each would have to earn as much as the whole family does now. We should have to adopt coal cutting by machinery on a more extensive scale and we might thus be able to reduce the cost. (To Mr. Whitworth.)—There would be a falling off in the attendance of the men who would not go under-ground in the same numbers that they do at present.

5. Wastage from stacking.—I do not agree with the opinion expressed by some other witnesses that the wastage would be only 10 per cent. It is on the evidence of my books that I put it at 20 to 30 per cent. It is particularly heavy during the rainy season and besides that there are abuses such as theft which are often unavoidable when a large stock accumulates. If we could load direct into wagons we could not save Re. 1-8 per ton; I would refer on this point to our answer to Question No. 4. The figure of 6 or 8 annas refers only to the coal which is stacked and not to the other coal. Our closing balance in stock at the end of the year would be perhaps 6,000 tons on total raisings of between 30,000 and 40,000 tons. We should save 8 annas a ton only on this closing balance and not on all the raisings of the colliery. The balance of 24,000 to 34,000 tons is loaded direct into wagons. The loss of 20 to 30 per cent. is included in the 8 annas per ton.

B. Possibility of economies in transport to Calcutta.

6. (a) Improvements in wagon supply.—With reference to our suggestions in our written reply—

(i) I can assert that we do not get supplies at fixed times at present. The wagons are put into the sidings at any time, morning, evening or night. This remark applies to all collieries. I am positive that the ten-hour system is not followed anywhere. If the railway say that they have a fixed time for giving wagons I state that this is not at all correct. It may be that by accident wagons are sometimes supplied in the morning and taken away in the evening; but that is exceptional. I should say this much, that the wagons should be supplied between 8 A.M. and 12 noon and should be drawn out early next morning. They should take out the loaded wagons and give a fresh supply at fixed times. At present there is no fixity at all about the time of supply.

(To Mr. Stuart Williams.)—It does not matter so much at what hour wagons are provided to us so long as the time is fixed and adhered to; but the best time would be in the morning not later than 12 noon.

(To Sir R. N. Mookerjee.)—I cannot compare the treatment which Indian and European collieries have received in this respect. I do not know how the railway officials treat the European collieries. I have my complaints against the railways but I do not know if the European collieries have not got complaints also.

(ii) By "more loading allowance in weight" we mean that the present wagons are not allowed to be loaded up to their full carrying capacity. If you are given a 20-tons wagon you are generally allowed to load only 18 under some restriction; this would be mostly for foreign lines but also sometimes for parent lines.

(iii) As regards "less wagon restrictions," many wagons are not allowed to be loaded for particular destinations; for example, the Bengal-Nagpur Railway N. P. type may not be loaded for the East Indian Railway. The railway will supply us with restricted wagons sometimes; then we cannot load and we lose our day's supply of wagons. On top of that we then have

to fight the railway over their attempt to charge us demurrage for failing to load.

(iv) By "small stabling yards" we mean small marshalling yards. I do not think that to supply these would involve heavy expenditure because there are empty spaces near most collieries, which would be available. To allow the yard master to make allotments might lead perhaps to accusations of preferential treatment. It is however always more convenient to refer to him than to the District Traffic Superintendent at Dhanbad when we have a complaint. If I go to Dhanbad I lose much of the time allowed for loading. What we want is to have allotment-officers on the spot. Each of them would have fewer collieries to deal with and he would thus be in closer touch with them. So when we had complaints we would get a remedy more quickly than we do from headquarters. Previously the system of allotment by Yard Master was in force and so far as I know it gave less trouble. It is just possible that they would be more susceptible to inducements than officers of higher rank.

(To Mr. Banerjee.)—Allotment officers are, I believe, at present below the rank of District Traffic Superintendents and higher than Yard Masters. Probably of course the District Traffic Superintendent would supervise their work. As to Pilot Guards the complaints that you hear against them come to the same thing as I have said about the time of placing wagons. I agree that they are often troublesome. It sometimes so happens that there is still time for loading left when the pilot arrives and then though he is early he leaves behind the wagons of which loading has not been finished. The Pilot Guards are not responsible men who care if the colliery suffers. This much I can say that they are not always reliable.

(To the President.)—On the whole I am fairly well satisfied with our relations to the railways.

(To Mr. Bell.)—The points on which I suggest that the Committee might recommend definite improvements are regular supply of wagons and regular times of supply. The improvements needed are those stated in the written reply. Emphatically a fixed time is necessary. It would allow better supervision of loading, more regular work and less trouble with labour.

(To Mr. Whitworth.)—I shall send the Committee if my owners allow it a statement of the actual times at which wagons were supplied each day during December at one of my collieries.

(v) As regards "removal of classification of supply" we do not support any preference for railways; they could do as other buyers do if they paid the same rates. We need not assume that the railways would not get the coal that they needed. They are the biggest buyers and the collieries would therefore be eager to despatch coal for them. Anyhow as they buy most of the coal they would get most of the wagons. (To Mr. Whitworth.)—It is the considered opinion of my Association that loco coal needs no preference. There might be some risk of stoppage of goods and passenger services but we think that there is no real danger. (To Mr. Legge.)—We consider that there will be no risk to these services because wagons would be available. If there were any acute shortage of wagons preference might be necessary as a temporary measure but ordinarily the occasion would not arise. Nowadays the wagon-supplies should be good enough to keep the railways supplied.

8. **Railway freight.**—I believe that our figure of Re. 1-8 does not include the rebate. I have not got the printed figures here. There might have been a mistake in typing the statement. I shall send the correct figures down.

9. **Work of the Coal Transportation Officer.**—The complication which results from his interference is due to the classifications which are controlled by him where previously there used to be free distribution. In my opinion the collieries got better supplies before. The complaint against this officer is really that some consumers do not get wagons at all; there is no equitable distribution.

E. Comparative merits of Indian and other coals.

18. **Comparative merits.**—Our opinion is derived from analytical reports of South African coal.

F. Grading, inspection and certification of coal.

24 to 31. **Grading of coal.**—Even if there were no legislation, I think that the trade could enforce the decisions of the Board. The Board would represent the trade and it would be to the interest of the trade to see that they enforced the Board's decisions. Shippers could be represented on the Board. We have not considered the possibility that it might pay individual shippers to disregard the Board's decisions and we did not think that there would be any difficulty about it.

The "Government bodies having control over the collieries" to which we refer in our reply are the Chief Mining Engineer and the Department of Mines.

(*To Mr. Legge.*)—The "test certificates from authorised Test Houses" would be certificates given by analysts authorised by the Board; they would be analysts of the standing of Mr. Briggs or the Government Test Houses.

33. **Effects of improved facilities.**—(*To Mr. Banerjee.*)—With reference to our reply to Question No. 6 we consider that, if the increased dumping is allowed for shipment of coal, preferential supply of wagons for the shipment of coal would not be necessary.

34. **Compulsory pooling.**—The reason why we mentioned prepayment of freight here is that if this system is not abolished the smaller collieries might not be able to pay.

(*The President.*—I think it is clear that the Association have misunderstood the suggestion as regards pooling.)

INDIAN MINING ASSOCIATION.

WRITTEN STATEMENT.

A. Possibility of economies on the coal fields.

1. **Reduction in cost at pit-head.**—There is very little scope for such reduction. Wages form a large part of raising costs and it is doubtful whether it would be possible to reduce these without disorganisation and trouble with labour even though it might only be temporary. The cost of machinery and stores has fallen in the last few years but has now reached a level below which it does not seem likely to fall to any great extent.

2. **Effect of recent increase in wages.**—In 1920 miners' wages were increased by $1\frac{1}{2}$ annas per tub of 13 cwt. and there was a general increase in wages of surface and underground labour of from 5 to 30 per cent. The extent to which these increases in wages affected the cost of production varied at each colliery. The rates paid to raising contractors have gone up in recent years by from 6 to 12 annas per ton. Increased wages resulted in less output per miner and the reduced output reacted on costs. Increased wages may therefore be taken as accounting for an extra 4 to 8 annas on every ton of coal raised. Supervision charges have also increased.

3. **Effect of legislation.**—Increased charges have arisen by the requirements of the new Mines Act, the new Boiler Act, the Electrical Rules, the Mines Boards or Health (housing and sanitation), the Jharia Water Board, and the Workmen's Compensation Act. It is difficult to give an exact figure of the extent to which the cost per ton has been increased but a rough figure would be 4 annas per ton. Other legislation affecting the costs is the Steel Industry Protection Act, and Bills in connection with Trades Unions, and

for the provision of Maternity Benefits, have been circulated for opinion. Proposals for the formation and training of Rescue Brigades, and also for the protection of mines from the hazard of coal dust explosions, have been mentioned. These will all add to costs though the extent is uncertain. Prohibition of the employment of women in mines has also been suggested. This, if it ever comes about, would have a very serious effect on raisings and costs.

4. **Possible savings in stacking charges.**—The answer to this question turns to a large extent on the quantity of coal put into stock. The extra handling would by itself probably cost from 4 to 6 annas per ton and in addition there is a loss of output by reason of the time lost in stacking and returning the tubs to the pit for re-loading. Consideration must also be taken of the extra housing accommodation necessary for the additional labour required for stacking, and of the additional loading charges.

5. **Wastage from stacking.**—Estimate of wastage from all causes (disintegration theft, fire and deterioration due to exposure to air).....not less than 20 per cent. The longer the coal remains in stock the greater the wastage.

B. Possibility of economies in transport to Calcutta.

6. (a) **Improvement in wagon-supply.**—We suggest that direct evidence from Colliery Managers on these points would be best. The suggestion is made that wagons should be distributed in colliery sidings as received, and stabled there ready for loading instead of in marshalling yards. We would draw attention to the loss in weight between the wagons as weighed at despatching station and on receipt at destination. Whilst some of this loss in weight is undoubtedly attributable to natural causes, by far a larger portion of it is attributable to pilferage *en route*. This evil is very much more noticeable in wagons despatched from the coalfields of Central India than is the case in Bengal.

(b) **Their influence on costs.**—Rapid handling of wagons must eventually reduce the cost at the colliery end by several annas per ton, besides ensuring better loading.

7. **Type of wagons.**—For export and bunker coal, nothing but open wagons, if this were feasible, such wagons being reserved for coal traffic only.

8. **Railway freight.**—If shipments are to be stimulated railway freights from the collieries to the docks must, in the opinion of the Committee, be reduced until they are brought back to pre-war rates.

9. **Work of Coal Transportation Officer.**—The Coal Transportation Officer has undoubtedly facilitated the supply of wagons. The view taken by the Committee, however, is that it is the duty of the respective railways to supply collieries with the wagons for which they indent and it is only because of the deficiency of wagons that has existed for many years that the appointment of the Coal Transportation Officer was found necessary.

C. Possibility of economies at the Docks and coal depôts.

10. **Port charges.**—Port charges, if possible, should be brought down to the pre-war level. It is obvious that anything which helps to increase the amount of coal shipped will also increase the revenue of the port.

11. **Improvements in handling wagons and results on costs.**—The present system under which coal wagons arrive at, are unloaded at, and are despatched from the docks is very unsatisfactory. The Port Commissioners deprecate the dumping of coal pending a vessel's arrival at her berth but this Committee advocates that 40 per cent. of a vessel's cargo should be dumped to allow of simultaneous loading from trucks and from the ground. This arrangement would enable the steady turn-round of empty trucks and also would facilitate the quick despatch of steamers.

12. **Loading and shipping facilities.**—Until there is a considerable increase in shipments the present facilities at Kidderpore Docks may be considered

adequate. The present docks should eventually be done away with for the loading of coal and staithes should be prepared in the tide-way, each staith to be prepared with receiving grids for incoming loads and one for outgoing empties and with a wagon dumping tip applicable to each hatch. It is realised that this is a scheme for the future and one which does not bear directly on the subject of the present enquiry but the Committee consider it should be taken as part of the scheme for the new dock extension.

13. Storage and stacking at docks.—Storage and stacking space should be provided with a view to stimulating traffic and expediting the release of wagons. Storage for 3,000 tons to 5,000 tons per berth should be provided and on this no dumping or other charges should be levied.

14, 15 and 16. Bunker coal.—The facilities provided for bunker coal at Shalimar and Howrah are adequate for the present volume of trade only, and this again must be qualified by the fact that it is impossible to load boats at any stage of the tide. Regular dredging is a necessity. The present level of charges is too high and if the sale of bunker coal is to be stimulated the charges will have to be reduced. Attention is drawn to the depôt rents at Shalimar in particular which have been increased since 1913-14 by from 51 per cent. to 287 per cent. Contractors' rates in recent years have gone up by about Re. 1 per ton.

D. Steamer Freight.

17. Steamer freights.—Steamer freights are governed by world supply and demand. Rates have come down considerably recently and are approaching the point where business in export coal may become possible. The expansion of the coal export trade, if obtained to the extent previously prevailing, will undoubtedly have the effect of attracting to Calcutta and the Coast a number of tramp steamers such as before the war made a business of coming to India for that trade and for which they were of a class specially suitable. Tramp steamers of this class are at present conspicuous by their absence. Their advent would have the effect, combined with quicker loading, of providing lower coal freights for coasting traffic.

E. Comparative merits and prices of Indian and other coals.

18. Comparative merits.—This information can best be obtained from those who have had experience of such coals. The opinion of the Committee, however, is that the best qualities of Indian coal can hold their own with the coals that are now being imported into India, Ceylon and the Straits Settlements.

19. C.i.f. prices of Indian coal.—C.i.f. prices of Indian coal at different ports would be—

	Rs.	A.	P.	
Madras	18	0	0	} subject to fluctuations of steamer freights.
Colombo	18	8	0	
Bombay	19	8	0	
Karachi	19	8	0	
Rangoon	18	0	0	
Singapore and Penang	19	8	0	

20. Prices.—The prices at which competing coals are selling at these ports are about the same—but the rate of exchange enters into the calculation.

21. How competition can be met.—By shipping only the best Indian coals; keeping up the standard of quality and by quoting favourable prices.

22. Possibility of new overseas markets.—We do not consider that there are any new markets overseas in which it would be possible to introduce Indian coal at present. It is essential to the Indian Coal Trade to regain the Colombo, Straits Settlements, Sabang, Aden and West Coast of India markets previously held.

23. Special assistance to other coals competing with Indian.—On coal exported from Durban there is a rebate of railway freights of 6s. 7d. per ton which at exchange of 1s. 5d. = Rs. 4-11.

F. Grading, inspection and certification of coal.

24. Grading of coal.—We are in favour of grading coal intended for (a) export and also for (b) bunkering, if such were feasible, which we doubt.

25. Classification into grades—

List No. 1.—Collieries entitled to a “Disherghar Quality” certificate of quality throughout the year.

List No. 2.—Collieries entitled to a “Disherghar Quality” certificate if shipped between the months of July and February.

List No. 3.—Collieries entitled to a “Selected Jharria” certificate of quality.

List No. 4.—Collieries entitled to a “First Class Jharria” certificate of quality.

List No. 5.—Collieries entitled to a “First Class Raniganj” certificate of quality.

26. Measures to effect grading.—By the formation of a Grading Board.

27. Control of grading.—The grading system should be controlled by a Grading Board, with a Government official as Chairman, and four members drawn from the following:—

(a) Indian Mining Association.

(b) Bengal Chamber of Commerce.

(c) Indian Mining Federation.

(d) Bengal National Chamber of Commerce.

28. Inspection and certification.—(a) We are in favour of this. The Grading Board would grant certificates. It is considered that, once the system were established, buyers would purchase coals according to the different grades. Such coal would receive a Grading Board Certificate. If, however, ungraded coals were shipped, they would not receive any certificate.

(b) The Grading Board who would utilise the present organisation of the Chief Mining Engineer for inspection at the Collieries and at the Docks would be the agency that we should suggest for the purpose.

29. Compulsory versus voluntary grading.—We are not in favour of compulsory grading.

30. Meeting of cost of grading and inspection.—By a small fee per ton, payable by the shipper.

31. Sale on analysis.—This is not practicable. The chief difficulty in the way of giving a guarantee of calorific value is the irregularity and uncertainty of the supply of rolling stock which make it exceedingly difficult to use mechanical plant for loading at the collieries. Furthermore the coal seams are so big and thick and vary so much in extent that it is very difficult to guarantee specific calorific value. Also the Committee are of opinion that the methods of consumers in India are as yet hardly sufficiently advanced to secure correctness of test.

G. Pooling of Coal.

32. Practicability of pooling and its effects.—Pooling among collieries under the same management has been in existence for a considerable time. Among collieries under different management pooling would be a matter for mutual arrangement. The Committee therefore do not consider that the general pooling of coal either for export or for bunkering would be practicable. The pooling of coal as done up to now has undoubtedly saved much time in the loading of ships. Pooling can best be done by mutual arrangement between

the firms shipping the same kinds of coal on the grading list. Pooling would usually only be necessary in times of wagon shortage.

33. Effect of improved facility on pooling.—(a) If a steady and adequate supply of wagons were available at the collieries for loading coal for export, and (b) if additional facilities were provided at the docks and coal depots, the question does not arise.

34. Compulsory versus voluntary pooling.—It is doubtful whether a compulsory pooling system is desirable; it certainly is not practicable.

INDIAN MINING FEDERATION.

WRITTEN STATEMENT.

A. Possibility of economies on the coalfields.

1. Reduction in cost at pit-head.—Except what reduction in cost may certainly be effected by increasing the output, there is practically speaking no scope for a further reduction of the cost of production. As the Advisory Committee on the coal industry attached to the British Mines Department reporting in December 1922 said, the problem of effecting economy in the cost “rests entirely upon increased demand, with a consequential increase in output and reduction in overhead charges.” In the present depressed market, an increase of output is of course an unthinkable proposition. As regards what is probably regarded as an obvious channel of possible reduction, viz., wages, the overhead salaries have already been adjusted as far as possible to the lower level of prices by individual attempts. As regards the labour wages it is neither possible nor desirable to effect any reduction. It is not possible because first, there is already a shortage of labour supply in the coalfields and secondly, the industry itself has not reached a state of organisation to attempt with success such concerted action. Reduction of wages is not desirable because the increased scale does not represent more than the bare advance in prices in the recent years. The fact that the present level of cost per ton does not admit of a reduction will be abundantly clear from the fact that the cost in India has not gone up more than 50 per cent. on the pre-war level, whereas in Great Britain the cost has on an average advanced roughly about 100 per cent. on the 1913 level. In the statement No. I attached to these replies will be found the details of the items which go to make up the cost per ton. The Committee are definitely of opinion that the figure of Rs. 4.10 per ton represents the irreducible marginal cost even under the best conditions of mining. A statement (No. II) is also enclosed herewith showing the recent cost per ton of some of the limited liability companies.

2. Effect of recent increase in wages.—The Committee estimate that on the level of 1918 the cost of production has increased by at least a rupee a ton owing to the increased scale of wages brought about mostly during the years 1919 and 1920 and also since. While the percentage of increase has varied from one class of labour to another (for instance the increase in the case of skilled labour other than miners has been about 100 per cent., that in the case of superior staff only 50 per cent.), the general increase of wages of all employees may be assumed at 50 per cent. A statement (No. III) is enclosed with these replies indicating the position of wages in 1918 and to-day. It is the calculation of the Committee that, in the present scale of cost of production, wages represent no less than 66 per cent. of the aggregate cost.

3. Effect of legislation.—It is extremely difficult to determine the exact incidence of added cost on the industry, as the legislations in question, the Workmen's Compensation Act and the Mines Act of 1923, came into operation so recently as July last. It is estimated, however, that the cost of taking out a policy for insurance of liability under the Workmen's Compensation

Act would work out at 1 anna per ton and the cost of maintaining additional staff owing to the limitation of hours under the Indian Mines Act of 1923, together with the other financial burden thrown by this Act, would amount to another annas 1-6 per ton. Regarding the proposed legislation, the Committee can scarcely believe that employment of women would be ever prohibited. Should, however, that calamity arise, the cost would go up by a rupee a ton.

4. Possible savings in stacking charges.—No calculation has been made as it has not been felt necessary under the chronic condition of wagon scarcity. The present system of precarious and deficient wagon supply makes stacking a normal method of a colliery's working. Apart from the general weakness of the wagon system, one fact is particularly noticeable that the annual seasonal deterioration of wagon supply coincides with the period of the colliery's most brisk raising. Any way, some calculation may yet be offered on this point. In the case of a very large number of mines, the siding is away from the pit and, in their case, should stacking be avoided a saving of charge by at least annas 2 a ton is likely to result. But this is only the extent of direct saving.

5. Wastage from stacking.—Waste, which is an indirect source of loss due to stacking, is not, however, precisely determinable, since this widely varies according to circumstances and depends on the quality of coal (presence of volatile matter), the quantity stacked, depot conditions and, what is most important of all, the stacking period. It has been the experience that a stock of second class Jharia coal which is characterised by low volatile content deteriorates 10 per cent. being held for two years. In the Raniganj fields a loss in weight of as much as 6 per cent. has been experienced in a stack held only for three months. It would be instructive to quote here the opinion of the Coalfields Committee of 1920 who estimated that there is a general waste of 15 per cent. owing to stacking due to defective transport facilities (*vide* Foley Report, Chapter VIII, paragraph 4).

B. Possibility of economies in transport to Calcutta.

6. (a) Improvements in wagon supply.—Most decidedly we have suggestions to make with regard to the system of wagon distribution. Firstly, it has always been the considered view of the Indian Mining Federation that the present system of preferential supply of wagons must give place to a system of proportionate supply or distribution of wagons on "basis" corresponding to what is termed in South Africa as the "declared capacity." This view of the Federation is too well-known to require further elaboration here. Secondly, the Committee would suggest the ear-marking of a specified minimum number of wagons a day for coal traffic, subject no doubt to well-defined reservations. Such a course would put a stop to the continual see-saw of the wagon-position from day to day.

The Committee have no suggestion of importance to make in regard to the loading and despatch of wagons at and from the collieries. They would, however, take here the opportunity to invite the Committee's attention to the state of things in the Bengal-Nagpur Railway system where wagons are placed on the colliery siding after lumping the allotment of several days together and where equal irregularity is displayed in drawing the loads out. The problem of overloaded coal which was thoroughly gone into by the Coal Traffic Conference of 1912 is unfortunately yet a problem awaiting solution. An improvement, in the opinion of the Committee, may be effected by raising the penal limit 2 tons above the marked carrying capacity of the wagon, instead of one ton as at present and also by Railway Companies strictly adhering to the recommendation 13 of the Coal Traffic Conference in the matter of marking a white "load" line on the wagon. There are other matters admittedly of lesser importance in connection with loading and drawing of wagons which, in the opinion of the Committee, should be discussed from time to time, in a conference of railway representatives and representatives of colliery managements. The attention of the Committee is in this connection drawn to recommendation 24 of Coal Traffic Conference.

(b) **Their influence on costs.**—As the existing system of preference in the matter of wagon supply tends to depress the internal market, its replacement by a system of proportionate distribution would enable the coal-owners to work on a smaller margin of profit for export and bunker trade than what it would be otherwise possible for them to do. Having regard to the serious competition which Indian coal will have to face with coals other than Indian both in the home and foreign ports, it is the presumption of the Committee that prices of export coal, at least for some years to come, will have to be lower than the internal prices ruling. Misgivings, however, may be felt that if lower level of export price will attract any business. As against this, it may be pointed out that the trade is now conscious of a danger of over-production. Moreover, most of the shippers are those who control very large output of coal. Lastly, the tendency of a combination to sacrifice coal for the shipment business is not now entirely absent.

It is idle to expect any direct reduction of cost of production either generally or specifically in regard to export and bunker coal resulting from a change in the system of wagon supply; at any rate there will be none in the opinion of the Committee.

7. **Type of wagons.**—The Committee would desire a more liberal supply of open trucks of larger types than what is provided at present for carrying of bunker and export traffic. It may be remarked in this connection that loading of open trucks should be limited to the flush-level.

8. **Railway freights.**—The Committee consider that the railway freights from coalfields to docks are too high, despite the grant of a rebate of a rupee per ton.

Firstly, the Natal coal which has a lead of 325 miles from coalfields to Durban pays a net freight of 6s. 4d. per ton (Rs. 4-2 at 1s. 6d. rate of exchange) against Rs. 3-4 (excluding Port Commissioners' terminal charges) paid by Indian coal on a lead of 170 miles. Evidently if Natal rates are commercial, the Indian rate admits of a further reduction.

Secondly, while the Committee understand that the East Indian and Bengal-Nagpur Railways quote a special rate of $1\frac{1}{4}$ pies per ton per mile to the Tata Iron and Steel and Bengal Iron Companies for conveyance of their materials, raw products and manufactured goods from and to Calcutta, the coal industry pays a trifle less than 4 pies per ton per mile for carriage of export coal from the coalfields to the docks.

The Committee suggest the freights from Jharia to docks should be equalised with the freights from Asansol to docks by a further rebate of one rupee on it.

9. **Work of Coal Transportation Officer.**—The system of work or to be precise, the kind of unsystematic work, which the Coal Transportation Officer stands for, has not and cannot facilitate bunker or export traffic or, for the matter of that, any traffic whatsoever. On the other hand, it is conceivable that the work of the Coal Transportation Officer may handicap such traffic, for on ultimate analysis the retention of the office of the Coal Transportation Officer has kept alive a sort of bullying method to coerce wagons in a period of scarcity. Two considerations may be offered to show that the trade can dispense with the office of Coal Transportation Officer. Firstly, between 1909 and 1914 when the Bengal coal trade recorded an average annual shipment business of 3,000,000 tons, there was no Coal Transportation Officer. Secondly, in South Africa (Natal) where there is a serious shortage of truckage (in 1920, the Natal mines being able to despatch 3.5 million tons out of a total production of 6.8 millions), no necessity has been felt for a traffic rationing authority such as the Coal Transportation Officer, though the Government are fully alive to the requirements of all industrial consumers.

C. Possibility of economies at the Docks and coal depôts.

10. **Port charges.**—The port charges have been reduced in the course of the last one year by 5 annas 6 pies a ton. This represents apparently a reduction of 25 per cent., but as a matter of fact this is not so. The real

incidence of the Port Commissioners' charges on the shippers of coal is really Re. 1 which is collected directly by the port authorities, *plus* a further sum of annas 4-6 being the terminal charge of the Port Commissioners collected by the railway authorities along with the freights. The total charge, therefore, of Re. 1-4-6 (to be more precise Re. 1-9, for the Port Commissioners' terminal charges are really 9 annas out of which annas 4-6 is met by the railways from their own earnings) compares very unfavourably with the port charge at Durban which is only 1s. or at Cardiff which is 13d. only or just 50 per cent. of the charges levied in Calcutta port. It would appear that the port charges at the Kidderpore Docks should admit of a further reduction. The Committee suggest that, having regard to enormous increase in terminal charges, the river due should be reduced to the pre-war level of annas 4 per ton.

11. Improvements in handling wagons and result on costs.—The Committee have several suggestions to make.

(i) The movement of traffic from coalfield to the docks should be speeded. At present a wagon on an average takes from 5 to 6 days to reach the dock junction station from the coalfields as against the pre-war average of 2 to 3 days. A statement (No. IV) is enclosed with these replies on the subject.

(ii) The Station should be "opened" for despatch of coal for a particular boat at least ten days in advance of the date on which it is due to be ready for loading alongside the berth. At present, in many cases the first wagon of coal for a boat does not reach the docks until after the boat has lain idle for two days at the berth, as stations are opened only three days in advance and the average time for a wagon to reach docks from the colliery is 5 to 6 days. It is necessary to give sufficient notice to the collieries for despatch of coal to the docks not only in the interest of good loading but also to prevent conflict with any commitment which a colliery may have in regard to the whole or a part of its day's or days' allotments.

(iii) Dumping of coal on wharf should be permitted to all regular shippers in order to build up a stock in hand irrespective of cargo intended for a particular boat. This system will have manifold advantages:—

- (a) it will eliminate labour difficulties,
- (b) it will obviate the necessity of special assistance of wagon supply for movement of shipment coal,
- (c) it will ensure regular shipment business,
- (d) it will facilitate better inspection by grading authorities, and
- (e) it will make for quicker loading of boat,
- (f) and hence for cheaper quotations of shipping freight.

What waste there will be due to dumping will be more than made good by improved loading of wagons and other valuable advantages indicated above. It will no doubt be necessary for the Port Commissioners in collaboration with Police authorities to provide better watch and ward facilities for the docks.

It is suggested that the maximum dumping period should not exceed two months and the maximum quantity dumped not more than 4,000 tons roughly for each shipper.

(iv) The maximum time to the Port authorities for unloading should not exceed 24 hours against 48 hours allowed at present. This need not be considered as too short a time, having regard to the fact that the maximum time allowed to collieries for loading a wagon is 10 hours and to depôt-holders at Calcutta stations for unloading a wagon 8 hours only.

(v) As few wagons as possible should be allowed to stand under load at the dock junctions, they being expeditiously shunted to the wharf and unloaded. Only those wagons which are booked for No. 19 and No. 20 berths should be occasionally an exception to this rule.

(vi) Empties returned by the Port authorities should be sent back to the coalfields in train-loads within a period of 24 hours reckoned from the moment they are landed back at the dock junction.

12. Loading and shipping facilities.—The Committee recognise that the ideal arrangement for loading a boat would undoubtedly be to lift the wagons on a transporter and to tip the contents right into the hatch. The wagon position as well as the absence of special types of trucks required in such operation probably rules this arrangement out as a practicable proposition. The Committee feel, however, that the existing arrangements may sufficiently be improved upon so as to reach a fairly efficient system from the points of view of both expeditious handling and prevention of breakages. The principal defects of the present labour berths are that coal is thrown out of baskets from a height of 40 to 50 feet, causing serious breakages of coal at least until a dump of 20 ft. height accumulates in the hatch. Secondly, the loading, as will no doubt be obvious, is tardy. In the mechanical berths except that the loading is much quicker (the average capacity of these berths being about 2,000 tons a day) matters are hardly improved. Firstly, the mechanical loading to be of any value requires the wagons to be brought alongside the 5 tons tubs and the coal unloaded into the latter through a hopper placed between them. This means in other words loading direct from the railway trucks—a position which is neither possible nor desirable to work upon at present. Secondly, there being too many handlings from wagon to hopper, then to skip, and then finally to the hatch, breakage is not as low as desirable.

In suggesting improvements the Committee start by recognising that dumping of coal is unavoidable. They consider that each of the berths should be provided with three or four travelling overhead transporters so that 5 or 6 tons tub may be filled manually from the dump and coal tipped right into the hatch. In the present labour berths, pending the installation of the mechanical transporter suggested, coal should be thrown into the hatch through a leather shoot, until the dump in the hatch has reached about 20 ft. height. The berths Nos. 19 and 20 should be improved by providing a storage bin so as to expedite release of trucks. So far as ultimate loading or the ship is concerned, loading from the bin would be an easier process than loading from the wagon; once the trap door of the bin is removed, coal will gravitate into the tub through the shoots. But for expeditious release of wagons, bins will have to be mechanically loaded direct from the wagons and with this end in view an over-head gantry will have to be provided for the bins.

13. Storage and stacking at docks.—Storage bins have already been suggested for two berths. They should be of the capacity of 9,000 tons each, divided probably into two or three compartments. But for the present labour berths, it would be essential to provide additional dumping space. The Committee understand the present capacity to be 80,000 tons, which in their view should be increased to 200,000 tons.

In view of the fact that the Committee have not suggested any appreciable reduction of Port Commissioners' charges in their reply to Question No. 10, they are of opinion that the cost of storage and additional dumping accommodation should be borne by Port Commissioners themselves. Such improvements as suggested are in the nature of increasing the earning capacity of the docks and may, therefore, be treated as capital expenditure to be met, if necessary, by issue of debentures.

14. Facilities at bunker coal depôts.—The facilities provided are inadequate for a large number of depôt-holders. While some of the depôts are just on the riverside, others are as much as 1 furlong or more away from the jetty. The allotment of depôt space is thus obviously faulty. The Committee consider that none of the depôts should extend lengthwise alongside the bank where they should have merely a narrow opening breadth space, thus allowing for more space to be allotted to the other depôt-holders close to the jetty. Another difficulty is that the river-bed round about the jetty is not maintained in proper condition by dredging so as to allow boats to reach the jetty during the ebb tide. It was originally understood that such dredging would be undertaken by the railway authorities at their own cost.

15. Depôt charges.—The depôt rents charged by the East Indian Railway and Port Commissioners at Howrah and Shalimar are too high. The rents

were enhanced by the East Indian Railway authorities in 1922 from 13 to 34 hundred per cent. despite a strong protest from the Indian Mining Federation and the Indian Mining Association. As regards the municipal rent, the same has been increased last year by about 400 per cent.

16. **Effect of carrying charges on bunkering costs.**—The cost of bunker coal has gone up to the extent of Re. 1-4 per ton owing to the recent increases of labour charges. This works out at approximately 100 per cent. on the pre-war level. The following table will indicate the rise under various items:—

Items.	Pre-war.	Present.
	As.	As.
Unloading wagons	2	5
Carrying to jetty	5	8 to 10
Boating	5 to 6	8
Trimming (including unloading the boat	7	14

Re. 1-3 to Re. 1-5 Rs. 2-3 to Rs. 2-5

D. Steamer freights.

17. **Steamer freights.**—With the exception of what low fixture can probably be obtained at a moment when there is no demand, the shipping freights have generally speaking gone up more than 50 per cent. on the pre-war level. Taking Bombay as a typical instance, the pre-war rate never exceeded Rs. 5 a ton against what can really be taken as an average of present day rate, viz., Rs. 8. This advance in freight compares unfavourably with the movement of freight on pre-war level in the case of other Indian export commodities. A statement (No. V) is enclosed with these replies indicating the position of freight before the war.

The most instructive comparison would be with the freight paid by South African coal and Welsh coal. In 1921 when the shipments of these coal were resumed after the war, the British coal paid a freight of 16s. and South African a freight of 11s. These are no doubt astonishing figures, comparing the distance of Cardiff to Bombay and Durban to Bombay with Calcutta to Bombay. These freights have now gone up but do not stand higher than 21-22s. and 16s. respectively corresponding to Rs. 14 and Rs. 10-8 roughly at the present rate of exchange. The secret of the low quotations is that the British steamers which come out to carry the enormous export trade of India can afford carrying a coal cargo from United Kingdom utmost at a ballast rate. The same is the case with South African coal which provides a cargo en route to British steamers calling to India for a remunerative return cargo. Besides, the Union Shipping Company which is a powerful shipping interest in South Africa is equally interested in Natal mines and does, therefore, deliberately keep freights down so as to facilitate competition in the foreign ports.

E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—The burning value of a coal may be determined with reference to the following criterions:—

- (i) Evaporative value,
- (ii) Free burning and quick steam-raising capacity,
- (iii) Length of the flame,
- (iv) Economic consumption, and
- (v) Suitability for specific purposes.

The Committee presume that all these merits of a particular coal may be judged with reference to its chemical analysis supplemented by the determination of its calorific value. To be more explicit, the evaporative value

is indicated by calories, the free burning and quick steam raising capacity by the presence of a high volatile, the length of the flame by the same evidence, economic consumption by the presence of low ash and high carbon percentage. A statement (No. VI) is attached with these replies giving the average analysis of the various qualities of Indian, Natal, Transvaal, Chinese, Japanese, Australian and English coal together with their calorific value. It would appear on a reference to the statement that the Indian coal would satisfy all the criterions of a good coal as well as most of the coals other than Indian.

19. **C.i.f. prices of Indian coal at different ports.**—If the pit-head price is assumed at Rs. 8 a ton, the f.o.b. price is worked out by the addition of the following items:—

	Rs. A. P.
Price of coal	8 0 0
Freight	3 8 6
Finance	0 4 0
Insurance	0 3 0
Port charges including supervision	1 1 0
Agency charges at destination end	0 4 0
TOTAL .	13 4 6

The c.i.f. price on this basis to different ports will work out (exclusive of allowance for loss in weight) as shown in the following table:—

	Price f. o. b. Rs. A. P.	Steamer Freight. Rs. A. P.	Price c. i. f. Rs. A. P.
Singapore	13 4 6	6 8 0	19 12 6
Rangoon	13 4 6	5 0 0	18 4 6
Colombo	13 4 6	6 0 0	19 4 6
Madras	13 4 6	5 0 0	18 4 6
Bombay	13 4 6	8 0 0	21 4 6
Karachi	13 4 6	8 0 0	21 4 6

20. **Prices.**—Some figures can be given, though not all (all quotations are o.i.f.)

Port.	Class of coal.	Price per ton. Rs. A. P.
Bombay—	Natal	18 8 0
	Witbank	17 8 0
Karachi—	Durban	19 8 0
Singapore—	Natal	19 10 0
	Witbank	18 0 0
	Japanese 1st	19 10 0
	Japanese 2nd	17 3 6
	Chinese	17 3 6
	Native	16 0 0 to 18 12 0
	Australian	23 0 0

(The rupee quotations are given converted at the prevailing rate of exchange.)

21. How competition can be met.—Before measures are suggested with a view to restoration of lost ports for Indian coal, it is necessary to determine the extent to which assistance is required from extraneous sources. On comparison of the figures given in reply to Question Nos. 19 and 20, it would appear that South African coal for instance which is everywhere the principal competitor, is underselling Indian coal by Rs. 2 to Rs. 3 exclusive of the allowance for loss in weight. Assuming even that Rs. 8 as pit's head price covers all reasonable allowance for loss in weight, there are other factors to be taken into account in determining the position of competition. Firstly, despite intrinsic quality, Indian coal will have to undersell South African or Japanese coal quality for quality, say, by at least Re. 1 a ton for some time to come. Secondly, the uncertain factor of exchange upsets all calculations, the rupee-sterling exchange showing continually a rising tendency. It would therefore be fair to concede one more rupee against Indian coal. The net position is that Indian coal is in need of assistance of Rs. 3 based on calculation of present prices *plus* Re. 1 a ton allowing for the Indian to undersell foreign coal *plus* another Re. 1 as a cover against further rise in exchange, in other words, of Rs. 5 a ton.

The Committee suggest the following measures to make up the estimated margin of Rs. 5 a ton:—

- (i) A grant of a further rebate of Re. 1 a ton on Jharia coal.
- (ii) Reduction of Port charges by annas 4,
- (iii) A countervailing duty on South African coal to the full extent of rebate (85-90) received by it and a general import duty of Rs. 4 a ton on all coal, including British coal, and
- (iv) A bounty of Rs. 2 a ton on coal exported to non-Indian ports to be paid out of the proceeds of the custom duties suggested under (iii).

Even if the import of foreign coal stand at the level at which it stands in the first half of this financial year, yet the revenue yielded from the duty would be roughly Rs. 16,00,000. This amount is enough to subsidise at the suggested rate 800,000 tons which is exactly the estimated market overseas for the present.

22. Possibility of new overseas markets.—The possible new markets are Aden, Mesopotamia, Sabang, Bangkok, Sumatra and Annam coast. Many of them are not new markets strictly speaking, for before the war Indian coal was exported to most of these places. Aden for instance imported on an average more than 100,000 tons of Indian coals. There is even now a market at Aden for this quantity of coal but Aden at present is being supplied with coal entirely by Africa and Great Britain. The requirements of the other places are not exactly determinable and in the absence of reliable data, the Committee do not propose risking any statement. They would suggest, however, the Government of India taking early steps to explore the possibility of markets in these places, particularly in Mesopotamia where there has recently been expansion of railways.

23. Special assistance to other coals competing with Indian.—Of the various coals competing with Indian coal in home and foreign ports, the most important is South African which, as well-known, enjoys a rebate in railway freight to the extent of 7s. 9d. per ton of 2,000 lb. Prior to January 1922 this rebate used to be 18s. 2d. per ton when it was reduced to 9s. 8d. and was eventually further reduced to the present figure in January 1923. This is the most important indirect bounty under the shelter of which South African coal is being loaded at the various ports at dumping prices. The advantage of British coal in the matter of steamer freight has already been referred to. The Japanese coal, like many other Japanese goods, is probably subsidised but there is no direct evidence to substantiate this proposition.

F. Grading, inspection and certification of coal.

24. Grading of coal.—The Committee would favour an effective grading of Indian coal for the purpose of export, although they are not impressed with its necessity for bunkering. In one sense, grading of Indian coal already exists irrespective of its any special importance for export and bunkering. But such grading as there is at present is not effective enough. The Committee frankly recognise that in the interest of a steady export trade it is essential that qualities of Indian coal which widely vary should be standardised and maintained once the buyers have been used to them.

25. Classification into grades.—The following grades are suggested together with their nomenclature and determinants:—

1st Class Jharia.

Those with over 7,000 calories and under 15 per cent. ash.

Superior second class Jharia.

Those with over 68,000 calories and under 17 per cent. ash.

Jharia second class.

Those with over 6,000 calories and over 17 per cent. ash.

1st Class Raniganj.

Those with over 6,500 calories and under 13 per cent. ash.

Superior second class Raniganj.

Those with over 6,000 calories and under 14 per cent. ash and over 6 per cent. moisture.

Raniganj Second Class.

Those with under 6,000 calories and over 14 per cent. ash.

It is different to specify coals under different gradations with any precision except without an elaborate analysis. The following specifications may, however, be tentatively suggested:—

1st Class Jharia—13, 14, 14A, 15 and 17 seam in the east-end of Jharia coalfield and Ramnagar seam in the Raniganj field.

Superior Second Class Jharia—10, 11, 12 seams as a rule and Laikdih (e.g., Gopinathpur, Laikdih) and Sulanpur A. seams (e.g., Rajapur, Damagariah).

Jharia second class—Lower seams below 10 and 16 seams, Mugma coals.

1st class Raniganj—Dishergarh, Poniat, Ghusick, Muradih and Bharanga coals.

Superior second class Raniganj—Kajora, Samla-kenda, Satgram, Jambad, Nimcha, Jamehari, Hatnol, Peepratand and Bamangarh.

Raniganj second class—Inferior Raniganj coal.

In suggesting the grades, the geological co-relation of seams has been steadily kept in view, hence the placing of Jharia 14 seam and Ramnagar seam in the same grade, both of which geologically belong to the Barakar series of coals.

26. Measures to effect grading.—It will be necessary to undertake legislation providing in the first instance that no coal shall be shipped from Kidderpore Docks unless graded and secondly providing for the recognition under the Act of such grading authority which the Indian Mining Federation and the Indian Mining Association may jointly set up, equally representative of both the bodies. The grounds on which legislation are urged are two-fold.

Firstly, without statutory prohibition there will be nothing to prevent a private shipper undertaking shipment of coal ungraded and secondly, the financing of grading operations will itself require statutory powers for the grading authority.

27. Control of grading.—As already indicated in the last reply, the grading authority should be a board solely representative of the colliery interests without any official personnel whatsoever.

28. (a) Inspection and certification.—As the Committee favour a rigid system of grading only on the ground that the present grading that there is, is ineffective, they are certainly also in favour of a system of inspection and of grant of certificate. In fact, it is precisely the lack of such a system which is the principal weakness of the present grading.

(b) Agency for this purpose.—This is obviously a matter of details and should best be left to the trade or the grading authority constituted under legislation. It is likely that the grading authority will have to maintain its own staff.

29. Compulsory versus voluntary grading.—Government should by no means take power to enforce compulsory grading unless they have granted a direct bounty of not less than Rs. 2 a ton on coal shipped to foreign ports or have protected the home market by a general duty on all foreign coal of not less than Rs. 4 a ton. In either case, Government would (in the first case in case of shipments to foreign ports only and in the second case in case of those to Indian ports only) be justified in taking drastic power to grade all coal and to realise the cost by a general levy on the industry and by charging per ton the coal certified.

30. Meeting of costs of grading and inspection.—A major part of the grading Board's income will undoubtedly have to be and should reasonably be derived from charging the shippers per ton of coal certified on inspection. It is difficult to state what the rate should be but the Committee are at any rate satisfied that this should not exceed 2 pice a ton.

31. Sale on analysis.—Export of coal on a guarantee of quality and calorific value is possible, and, as a matter of fact, shipment has been attempted on this line. By itself this method is an improvement on the more common practice of selling on the basis of seam and the colliery's name, for a buyer not familiar with Indian coal obtains a fair idea of the quality of the coal in question but yet the guarantee of an individual seller does not command enough confidence among the buyers. What is necessary is authoritative standardisation; and quality and calorific value determined by analysis, when authoritatively standardised, are exactly what grading aims at.

G. Pooling of coal.

32. Practicability of pooling and its effects.—Pooling, as far as it suggests shipment of a cargo or bunkering a boat jointly from the products of several collieries, already exists in some form and is, therefore, practicable. But pooling in so far as it presupposes a combination of the collieries to participate in the total business of the pool on an agreed-on basis does not exist at present nor is it practicable at the present moment.

If the proposals for improvement of dock facilities suggested in these replies are given effect to, they will reduce detention of ship to its possible minimum and pooling, even if it were practicable immediately, would not effect a greater reduction of detention to trucks and ships.

33. Effects of improved facilities on pooling.—Pooling is not at all a necessity under Indian conditions as in Natal owing to the exigencies of wagon position and dock facilities, even as they are. The necessity for pooling in so far as it may be supposed to be based on the inadequacy of facilities would be still further reduced under improved conditions.

34. Compulsory versus voluntary pooling.—A system of compulsory pooling is neither desirable nor practicable to any effective degree.

STATEMENT No. I.

*Showing the average cost per ton of a colliery raising 2,000 tons *a month working "sircari".*

	Rs. A.
1. Coal getting	1 0
(Wages on an average being 10 annas per tub of 13 cwt.)	
2. Coal raising	0 4
Tramming underground 1 anna	
Banksman and onsetter 2 annas	
Timbering 1 anna	
3. Main driving	0 3
(Average rate payable being Rs. 2 per each 2 feet)	
4. Machinery, plant and tramway maintenance	0 1
5. Pumping (including wages of boilers)	0 1
6. Boiler Consumption	0 5
7. Tramming and loading	0 4
8. Stacking	0 2
9. Establishment	0 12
10. Stores	0 3
11. Recruiting	0 2
12. Machinery, hut and road repairs	0 1
13. Sale charges or Calcutta establishment	0 6
14. Royalty	0 6
15. Taxes and cesses	0 4
Chowkidari, 2 pies	} 1 anna
Water Board, 7 pies	
Mines Board, 3 pies	
Workmen's Insurance 1 anna	
Road Cess 1 anna	
Income-Tax 1 anna	
16. Depreciation	0 3
17. Miscellaneous	0 1
TOTAL	4 10

* This quantity includes steam coal only with, however, an unavoidable mixture of slack and rubble representing about 10 per cent. of the output.

STATEMENT No. II.

Showing the average cost per ton of some of the limited liability companies in the recent years.

Name of Coal Companies.	Last half year of 1922.	First half year of 1923.	Second half year of 1923.	First half year of 1924.	Second half year of 1924.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Bengal Coal Co., Ltd. .	6 0 2	5 13 9	5 8 9	5 2 7	5 7 10
Gopalichuck Coal Co., Ltd.	8 10 4	7 14 3	6 10 4	6 0 4	..
Burrakkur Coal Co., Ltd .	7 10 0	6 10 0	..	5 11 0	..
Baraboni Coal Co., Ltd .	6 3 5	5 12 0	5 7 3	..	..
Bilbera Coal Co., Ltd .	..	4 15 0	..	4 7 10	..
New Birbhum Co., Ltd .	..	4 10 0	4 15 0	4 11 0	..

NOTE 1.—Half years of No. 1 closing in April and October.

Half years of No. 2 closing in June and December.

Half years of No. 3 closing in June and December.

Half years of No. 4 closing in June and December.

Half years of No. 5 closing in May and November.

Half years of No. 6 closing in April and October.

NOTE 2.—These figures of cost per ton do not include however the depreciation on block accounts as well as the sundry taxes and cesses which are under the usual practice of accountancy observed by limited companies written off the profits in the profit and loss account and not in the revenue account.

STATEMENT No. III.

Showing the comparative position of wages in 1918 and 1924.

	1918. per month.	1924. per month.
	Rs.	Rs.
Manager—		
First Class	250—350	500—800
Second Class	100—150	150—250
Surveyor	35—50	50—90
Cashier	40	75
Store-Keeper	25	45—60
Peons	15—16	20—22
Overman	25—45	45—60
Sirdars	15—18	22—30
Fitters	20—40	40—100

	1918.	1924.
	per tub.	per tub.
Miners	As. 5 to As. 6	As. 9 to As. 14
Loaders	As. 1-6 to As. 2	As. 2-6 to As. 4
Tramer	As. 1-6	As. 2-6
Banksman }	As. 1-6	As. 2-6
Onsetter }		
	per day.	per day.
Bailer	As. 6 to As. 7	As. 10 to As. 12

STATEMENT No. IV.

Showing the time taken by some wagons in reaching Howrah Depôt from the coalfields.

PRE-WAR POSITION.

October, 1912.

Wagon No.	Name of Colliery.	Date of Despatch.	Date of Arrival.	Total Days.
4624	Bhowra	11th October 1912 . .	16th October 1912 . .	6
807	Kajora	15th October 1912 . .	19th October 1912 . .	5
21970	Gararia	19th October 1912 . .	26th October 1912 . .	8
19515	Tetturia	22nd October 1912 . .	26th October 1912 . .	5
11757	Bhowra	23rd October 1912 . .	28th October 1912 . .	6

October, 1913.

11856	Bhowra	1st October 1913 . .	6th October 1913 . .	6
3086	Dhurmand	18th October 1913 . .	23rd October 1913 . .	5
7050	Do.	18th October 1913 . .	23rd October 1913 . .	5
2016	Gararia	18th October 1913 . .	21st October 1913 . .	3
6488	Dhurmand	22nd October 1913 . .	27th October 1913 . .	6

3372	Tetturia . .	12th October 1923 .	18th October 1923 .	7
5243	Gazlitand . .	18th October 1923 .	29th October 1923 .	12
23445	Do. . .	18th October 1923 .	28th October 1923 .	11
4931	Do. . .	18th October 1923 .	27th October 1923 .	10
4849	Do. . .	18th October 1923 .	31st October 1923 .	14
5488	Kenda . .	18th October 1923 .	23rd October 1923 .	6
5918	Parsea . .	19th October 1923 .	24th October 1923 .	6
20608	C. Bansjora . .	22nd October 1923 .	26th October 1923 .	5
42190	Kenda . .	21st October 1923 .	29th October 1923 .	9
2528	Tetturia . .	31st October 1923 .	7th November 1923 .	8



सत्यमेव जयते

Wagon No.	Name of Colliery.	Date of Despatch.	Date of Arrival.	Total days.
10406	Shibpur . . .	22nd September 1924 .	5th October 1924 .	14
38998	Tetturia . . .	4th October 1924 .	9th October 1924 .	6
25110	Do. . . .	4th October 1924 .	11th October 1924 .	8
46185	Kenda . . .	3rd October 1924 .	9th October 1924 .	7
48169	Do. . . .	3rd October 1924 .	9th October 1924 .	7
42313	Do. . . .	5th October 1924 .	10th October 1924 .	6
9882	Sudi	14th October 1924 .	19th October 1924 .	6
82	Do. . . .	14th October 1924 .	19th October 1924 .	6
22801	Do. . . .	15th October 1924 .	19th October 1924 .	5
42656	E. Jamehari .	14th October 1924 .	2nd November 1924 .	19

STATEMENT No. V.

Showing the average sea freights of coal from Calcutta.

(Vide Calcutta Port Facilities Enquiry Committee Report, 1914, Volume II, page 262.)

Year.	Bombay.	Karachi.	Colombo.	Singapore.	Madras.	Rangoon.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1905 . .	4 6 0	4 10 0	3 13 0	3 12 0	3 6 0	3 0 0
1906 . .	5 0 0	4 12 0	4 1 0	3 14 0	3 7 0	2 15 0
1907 . .	5 1 0	5 5 0	4 14 0	4 12 0	4 1 0	2 15 0
1908 . .	4 9 0	4 6 0	3 0 0	3 4 0	2 7 0	2 15 0
1909 . .	4 11 0	4 11 0	3 13 0	3 4 0	3 1 0	2 9 0
1910 . .	4 12 0	4 3 0	3 6 0	4 0 0	3 0 0	2 12 0
1911 . .	5 15 0	5 6 0	4 11 0	..	4 12 0	4 3 0
1912 . .	6 3 0	7 12 0	6 2 0	5 13 0	5 5 0	4 13 0
1913 . .	6 12 0	6 12 0	5 10 0	5 3 0	4 10 6	4 13 0

STATEMENT No. VI.

Showing the average analysis and calorific value of Indian and other coals.

Coal.	Calories.	Carbon.	Volatile.	Ash.	Moisture.
Dishergarh . . .	7085	53.16	34.15	9.36	3.33
Best Raniganj . . .	6920	56.06	32.44	9.10	4.36
Inferior Raniganj . . .	6380	49.13	33.38	11.04	6.45
First Class Jharra . . .	7200	68.68	17.68	12.75	1.03
10, 11, 12 Seam Jharra . . .	6950	64.35	19.45	15.14	1.06
Inferior Jharra . . .	6013	59.15	15.60	24.35	.9
Natal	6950	66.8	18.3	13.4	1.5
Witbank	6766	54.66	25.72	16.84	2.78
Japanese	7040	53.69	35.21	7.5	3.60
Chinese . . . . .	..	71.09	21.18	3.12	4.60
Australian	6975	52.57	34.84	9.9	2.60
British	7600	58.84	34.73	2.43	4.00
Native Straits (Borneo) . . .	7200	67.53	20.92	3.	8.55

**Rai Bahadur A. C. BANERJEE, A. L. OJHA, Esq., and
H. C. READ, Esq., representatives of the Indian Mining
Federation; and K. M. PURKAYASTHA, Esq.,
Secretary to the Indian Mining Federation.**

(Oral evidence—9th January 1925.)

(The evidence throughout is that given by Mr. Purkayastha except where otherwise stated.)

General.—The membership of the Federation fluctuates on a seasonal basis. Members retire for a time and then join again in large numbers when trade revives. At present there are well over 250 members on the roll, in fact nearly 300. I should explain that we have a special rule by which we practically treat the collieries as members: we would regard, for instance, Messrs. N. C. Sircar & Sons as members for one of their collieries only and would not treat the rest of their collieries as members, unless they pay specifically separate subscriptions in respect of each colliery that they own or manage. Almost the entire Indian capital on the Jharia field is represented on the Federation except the small collieries on the Khanoodi side. We are, however, less representative on the Raniganj field. As to our relations with the Mining Association, we started only in 1913, whereas the Association is a much older body, having, I presume, been started in the nineties; and a few firms which joined us continued to retain their membership on the Association.

(To Mr. Stuart Williams.)—I am afraid that I cannot give any precise figures to show how far the Federation is interested in shipment of coal.

(To Sir Rajendra Nathi Mookerjee.)—The whole of the written statement represents the considered opinion of the Federation. My oral evidence does so also and so far as I contradict the written statement I may be considered to give my case away. My remarks may then be taken as representing my own personal opinion, but I am authorised to speak for the Federation. When we all agree in our opinion as given verbally to the Committee, it represents the considered opinion of the Federation.

Surplus for export.—In my opinion it is correct to say that there is a surplus of Indian coal for export. I base this opinion on the fact that there is now over-production in the coal fields. Immediately following the war there was an industrial boom which gave rise to a strong demand for coal; but as this was followed by an industrial slump, the demand for coal declined and the result to-day is actual over-production. I consider that there is a great danger threatening the coal industry when the Bokaro-Ramgarh, the Talcher and the Karanpura fields would be fully working. How much will be the output from these fields, I am afraid I cannot say, but we have reasons to suppose that it will be very large: otherwise Government would not have launched so extensive a programme of development in these fields as they have done. In February last Government gave figures showing that they proposed to lay out one crore of rupees on the development of the Karanpura and Talcher fields. Besides this I may mention that the Central Provinces coal is enormously gaining ground: owing to the appalling freight rates charged on Bengal coal, the Central Provinces coal is more and more ousting Bengal coal in the western centres of consumption. Naturally the output is responding to the increased demand.

(The President.)—I would remind you that this Committee has been appointed to consider the question of Indian coal as a whole and not of Bengal coal only.)

I assumed that the object of the Committee was to stimulate the export of coal and since Central Provinces coal or, for the matter of that, Assam

coal cannot be exported, I took it that the Committee was interested in Raniganj and Jharia coal.

Mr. Read.—*Mr. Purkayastha* means that there is a surplus now and that with the development of other fields that surplus will grow larger. We have no hostility to the Central Provinces coal industry.

For the reason which I have given I apprehend over-production. I should explain in this connection that our answer to question 24 does not mean to suggest that only high-class coal should be exported. What class of coal will be exported will depend on the buyers. All that we suggest is that buyers should be under no illusion as to the class of coal which they buy.

A. Possibility of economies on the coalfields.

General.—(*Mr. Read.*)—It is not fair to argue that because Natal and the Transvaal can produce coal at six shillings pit-head or the equivalent of Rs. 4 at the present exchange rates, India should also be able to do so. South African collieries are now in the same position as Indian collieries were 20 years ago. They have only recently started work and so have easy mining and lower costs. It is only 15 or 16 years ago that the Natal coalfields were really opened up. It is still of course easier to work coal here than in Great Britain. It would be just as unfair to argue that the cost in England which is now 16 shillings and odd should be reducible to the same figure as that in India.

1. Reduction in cost at pit-head.—Statement II shows that the cost of raising coal is coming down. This is due to the individual attempts made to secure economy, but the total reduction is only a matter of annas. We agree that an increase of output would mean cheaper coal, but an increase in output is at present impossible with the market so depressed as it is. Also, you could only develop a colliery to a certain limit: there is, I mean, a definite limit to its potential capacity.

As regards our opinion that Rs. 4-10 per ton is the irreducible marginal cost of mining, I would refer to Statement II which will give you an idea, that, for every one working good class coal, the cost is in the region of Rs. 5-8. Our figure for export coal is Rs. 8: of this Rs. 5-8 represents raising costs. Annas nine would be for shortage, loss of weight: I do not consider this a high percentage; it represents only 2½ per cent. We have definite figures that the wastage *en route* from the coalfields to Sealdah is 6 per cent., and 0-9-0 was the definite loss in the experience of the Calcutta Coal Combine.

This gives a total of Rs. 6-1-0, while Rs. 8 is the f.o.r. colliery price. We include loss of weight in this f.o.r. price. You must include the loss in weight. We see no reason why we should not include that item here in our f.o.r. price; you must put it in somewhere when you are getting a figure for your c.i.f. price; and recognising that there will be a loss of weight we prefer to allow for it at the colliery. Adding Re. 1 as profit for the colliery to the figure Rs. 6-1-0 already arrived at, we get Rs. 7-1-0. As regards the margin of 0-15-0 still to be accounted for, there is a point which I should like to emphasise and that is the difference between the superior and inferior classes of coal which determines their prices in the market. If Lodna coal, for example, sells at Rs. 7-1-0, then the price which could be obtained for 9 and 10 seam Jharia in the internal market would not cover the raising expenses and give any reasonable profit: it would be only Rs. 4-8-0 or so. Therefore a difference of fifteen annas must be taken to represent the difference in the quality of the coal. It is an adventurous advantage which the superior class of coal enjoys on the score of quality. But it is impossible to ignore this. (*To Mr. Legge.*)—I mean that there is a fixed difference in price between the good coal and inferior coal: it is not definitely established, but you have to recognise it.

The figure of Rs. 5-8-0 for raising costs includes Calcutta charges (though not depreciation or taxes such as income and super-taxes) and is therefore quite a modest figure. The Re. 1 for profit is exclusive of all taxes.

Mr. Read.—In our figure of Rs. 4-10-0 per ton for irreducible marginal costs we include depreciation though it is not included in the figure of Rs. 5-8-0, which we get from Statement II. Strictly speaking, it is correct to include depreciation in the raising costs, though when you get your accounts audited they insist on showing depreciation and taxes as coming out of profits which is all wrong.

(*To Mr. Bray.*)—The one rupee figure as a margin of reasonable profit is an under-estimate rather than an over-estimate. For the reason which I have already given, the extra fifteen annas have to be earned as a profit and they will be earned if there is no trade depression. If we are to sell 2nd class coal at Rs. 5-8-0 per ton, Lodna coal must be sold at Rs. 8: there is no alternative if we are to avoid selling the lower quality coal at below cost price. I agree that there is a margin of profit therefore on first class coal when it sells at Rs. 8.

Mr. Read.—There are two points in fact: first, unless you have a margin of profit on first class coal, second class coal cannot live; and secondly, the costs in Statement II are taken from Companies' costs which exclude depreciation and taxes and therefore these two items must be included in the extra fifteen annas. If we include them in costs the price goes up to Rs. 6-4-0 a ton and your figure for profit must be reduced accordingly. (*To Sir Rajendra Nath Mookerjee.*)—I cannot say that the royalties are higher on first class coal than they are on second. The factor that determines the rate of the royalty is the period when the lease is taken and not the quality of the coal. I should mention that all collieries have improved their methods of working and costs are on the rise.

(*To Mr. Bray.*)—Our Rs. 4-10-0 represents the average cost on raisings of 2,000 tons a month in a colliery working easy coal. In an older colliery working deeper coal you could not keep your costs so low even on the basis of 5,000 tons a month.

2. Effect of recent increase in wages.—As regards the comparison between wages actually earned by miners in South Africa and those earned on the Indian coal fields, Statement No. III will show what we pay for unskilled labour: for example, a bailer will earn from 10 annas to 12 annas a day and that represents more or less the amount which we pay for unskilled labour, a particular bailer will only be paid six days in a week but some one has to be paid every day in the week for that bailer's work. A coal cutter works eight hours a day at most.

Mr. Read.—A miner raises three tubs per day on the Jharia field, i.e., 2 tons, which means that he earns Rs. 2-4-0 per day—he and his wife. He would work about 5 days a week, that gives them Rs. 11-4-0 a week or Rs. 45 a month between them. (*To Mr. Whitworth.*)—Generally, in the majority of cases, we get five full days' work out of each miner. I am speaking of conditions as they should exist. To-day, however, in certain places you will only get 4 days' work on account of the depressed state of the market.

The important reason in my opinion is that since the increase in wages the miners work shorter hours. Experience shows everywhere that they work for the particular amount that they need each week and having earned it do not try to earn more. The depressed market comes in as an influence on colliery management. Before 1920 they worked, one might say, five days and over: you may put it at 4 days and over at present.

Mr. Read.—I would not agree that during the last 5 years, that is, since the increase in wages was given, the miners do not work

more than 4 full days in the week. So long as the market was good during those years they did work for five days a week.

They might do so in a colliery which is not depressed, but I still think it right to say that they work from 4 to 5 day

Mr. Read.—On the Raniganj coal fields, I should mention, they work for longer periods, not less than 5 days a week. That is so to-day. It is more difficult to get coal there than in the Jharia field.

Mr. Ojha.—A miner will work from 8 to 12 hours a day, but, of course, he does not actually work all that time.

Rai Bahadur A. C. Banerjee.—He does not do substantial work, that is, he will remain 12 hours under ground but on the average will not work for more than 8 hours.

Mr. Read.—I should put the average earnings of a miner at between Rs. 40 to Rs. 45 per month.

(*To Mr. Bray.*)—No reduction in wages is possible. The rate of wages here is below that in South Africa, yet South Africa produces at Re. 1 per ton less than India for the reason that each South African colliery raises a large output: there are a comparatively few mines owned by a few companies. I would refer to the Chief Inspector of Mines' Report for 1923 as regards the average output per man in British India and to the Supplement to the Indian Trade Journal on Production and Consumption of Coal in India for Natal figures. They are respectively 105 tons and 193. This is a sufficient explanation by itself, but over and above that there is the fact that each mine in South Africa controls a large output. There are 31 collieries in Natal and they have a potential capacity of 6 million tons.

4. Possible savings in stacking charges.—Two annas a ton represents the loss other than that from indirect causes with which we deal in reply to question 5.

Mr. Read.—As regards the amount of coal stacked in the Jharia and Raniganj fields, I would refer to the figure for average output during the last half year. It is equivalent to an average of 3,164 wagons per day for the two coalfields. Against this the average number of wagons supplied was between 2,700 and 2,800. One may deduce that the margin of between 300 and 400 wagon loads of coal per day went into stack. (*To Mr. Whitworth.*)—We must exclude from this figure the amount used for boiler consumption on the collieries and for coke making. This reduces the figure for loss below 15 per cent.

How long and to what extent the coal is in stack varies from year to year. At the end of 1919, the stock was 2½ million tons, but since then the output has declined and the stock would be less. When the demand for coal falls off, raisings are reduced.

Mr. Read.—It is not correct to say that coal does not remain long in the coal stacks because they are continually being renewed. In the present condition of the sidings a considerable amount of coal has to remain indefinitely at the bottom of the stack.

Stocks are larger during the first period of the year when the wagon position is tight. At the end of the year wagons are more plentiful. (*To Mr. Legge.*)—By "first period of the year" I mean the first six months.

(*To Mr. Banerjee.*)—Even if wagons are available, the stocks accumulated during the first half year may not be cleared by the 31st December if orders are not received for coal: the extent of the stocks depends both on the output and on the condition of the market. The figure for stocks at the end of the year varies from year to year. I do not accept the suggestion that there should be seasonal rates of freight. They could not and should not be given effect to. Why should Government go out of its way to induce

buyers to come into the market at any particular time and cut down its railway earnings by doing so?

Mr. Ojha.—Seasonal freights would be a real inducement to consumers to take coal at a time when wagons are plentiful.

Mr. Read.—In my opinion it would not pay. Coal consumers do not want to lock up their capital.

Mr. Ojha.—I think consumers should be expected to buy coal in the slack season. They buy other stores in advance even if they lock up capital and why should they expect preference at a time when wagons are scarce? For example, a jute-mill buys its jute in advance, a cotton-mill buys its cotton in advance, why should not they buy coal similarly? Why should they try to buy their coal at the last moment when wagons are not available and raise a clamour that they must have preference?

Rai Bahadur A. C. Banerjee.—The idea of seasonal freight was given a trial and it was found that the consumers did not want it.

Mr. Read.—(To *Mr. Legge.*)—"Chronic" in line 2 of our reply to this question refers to the whole year, when ordinary market conditions prevail.

The seasonal intensity of wagon scarcity is, however, chronic also.

5. **Wastage from stacking.**—I accept the figure of 15 per cent. that was taken by the Coalfields Committee of 1920.

Mr. Read.—The amount of coal stacked varies with the colliery. I should put the amount stacked at 10 to 12 per cent. throughout the field. Some exceed this figure and some do not reach it.

I should mention that the figure of Rs. 4-10-0 for marginal cost does not include allowance for wastage.

Mr. Ojha.—Another point is that if coal gets away quickly as it is raised, then it fetches a better price on quality, (to *Mr. Banerjee*) and when this happens there is also a surplus of wagons.

B. Possibility of economies in transport to Calcutta.

6. (a) **Improvements in wagon supply.**—The Federation generally favour abolition of preferential supply, but I am directed not to commit myself to any opinion on the subject of loco supplies, either for or against preference. As a general matter we oppose preference and advocate allotment of wagons purely on the basis of colliery raisings. We should not favour any preference for shipment coal: dumping is the remedy for the difficulties as regards coal for export. (To *Mr. Banerjee.*)—We have been in constant communication with the Railway Board and the Commerce Department on the subject of the abolition of preference and there is a whole cycle of correspondence about it. We are always met by some objection from the point of view of either the railways or the consumers and the result has been the series of compromises which never satisfy any one. It took us four years to get a satisfactory scheme of wagon distribution. The preferential system was in force up to 1922 when the present system came in and for that matter the present system is still a preferential system. I cannot say that the coal trade is unanimous in desiring to abolish the preferential system. We think the reason for this divergence of opinion is that the system gives an advantage to collieries who have booked orders from influential buyers able to command preference. Some collieries can get away all their stocks and others cannot get anything at all away.

Mr. Ojha.—Our sister body, i.e., the Association, could explain this point of view. To my mind the difference is due to the Federation representing only the producing interest in coal. It is the only body which represents producers exclusively. The Association represents consumers also.

It is Janus-faced: it has the two aspects of consumer and producer and so is not affected so seriously by the preferential system as the Federation is.

(*To Mr. Banerjee.*)—In our opinion the preferential system is illegal. We have asked the Government of India to appoint a Commission under the Railway Act, which shows that we regard the system as illegal. I would refer to the Communiqué of the Commerce Department, dated December the 26th, 1916, appointing the Coal Committee, which, with the expressed object of enabling the Railways to comply with the Railway Act, promised a notification under section 147 of the Railway Act exempting them from the provisions of section 42 (ii). I do not agree that this shows that the preferential system can be legalised by Government by the issue of a notification. It is altogether contrary to the spirit of railway legislation, which provides against undue preference, to continue preference for an indefinite period.

(*To Mr. Bray.*)—One can avoid giving preference to shipment coal by making arrangements for dumping. We suggest that opening stations should be abolished and that each recognised shipper should be allowed to send down from the coalfields supplies of coal irrespective of a specific shipment-order and so build up stocks. It would not be difficult to get wagons for the purpose, because when we advocate the abolition of the Coal Transportation Officer we are presuming that the supply of wagons will be fairly good. It would not be necessary under this system to dump the whole cargo, for if we are given a *pro rata* allotment each colliery will get some wagons every day. Say my colliery gets 30 wagons and has commitments for mills and shipment; then it can give preference to the shipment-coal, if required.

(*To Mr. Legge.*)—We should treat dumping for shipments like stacking for bunkers at the coal depôts, that is, we should keep stocks and continually replenish them. We should do away with rakes and half rakes.

Mr. Ojha.—We might give them, if necessary, an accumulated supply in advance.

I do not agree with this. The total wagon resources at the disposal of the Railways on a day should be distributed proportionately. Our experience of the present arrangement is very bitter. (*To Mr. Stuart Williams.*)—We would have wagons allocated on raisings without regard to any special demands or quality or shipment orders. What data of raisings we should work upon is a matter of detail. The practice now is to take the average of the previous quarter. There might be some difficulty when a colliery is in process of development, but a solution should not be impossible.

(*To Mr. Legge.*)—As regards the number of wagons which we would suggest to be ear-marked for coal traffic, we may point out that on January 1st, 1925, as many as 2,556 wagons were allotted on the East Indian Railway full on indent for coal. When the potential capacity is calculated on a figure of this sort, we are safe to assume 2,700 as the potential total for the whole railway and we may take 2,000 as a fair minimum to be ear-marked for coal. So on the Bengal Nagpur Railway the number might be 700. "The well-defined reservations" would mean such things as a breach or a strike.

As regards our remarks on over-loading, the formula suggested by the East Indian Railway after the 1912 Conference and the similar formula given by Mr. Burnand recently are no remedy because the types of wagon vary so greatly, but we have reason to believe that the trouble lies not in the wagon load-line up to which loading is done but elsewhere, i.e., in imperfect weighment.

Mr. Read.—Every colliery manager calculates the load for various wagons and that is the very reason why we are so anxious to know the causes of over-loading. In one colliery the manager marked off the height in each wagon to which loading should be allowed and invariably got short loading; then trying to

avoid under-loading he was caught the other way. It was Raniganj coal and good coal that he was loading. The formula for calculating the height to which wagons should be loaded is a simple one. I have heard of several other managers who experienced the same thing. There are six weigh-bridges on the whole on the Jharia coalfield, including the Bengal Nagpur Railway. The wagons go over them very quickly and I do not see how the weigh-bridge clerks can manage to read the weights at that speed. I have seen the method of weighing personally. (To Mr. Whitworth.)—The manager knows the specific gravity of his own coal and I can say with confidence that the formula is used already.

My specific suggestion would be to raise the free margin by one ton. We must naturally aim at loading as near as possible up to the margin.

Rai Bahadur A. C. Banerjee.—The remedy is to allow flush-loading. Cannot wagons be so constructed as to allow this?

Mr. Read.—If the objection to raising the free margin is that it affects safety, then lower the carrying capacity of the wagon and so get a greater free margin.

We should certainly consider that it would be of use to revive the meetings of colliery and railway officials referred to in recommendation 24 of the Coal Traffic Conference.

Mr. Read.—They held some meetings in 1913. I was present at all of them and was present at the last meeting of all. It was not because people did not attend them that they died. In my opinion they could be revived. The composition which we would suggest for the monthly meetings would be the same as used to be in the past. But it would be an excellent thing to have the railway Coal Manager as well as the local District Officer if he can spare the time.

This will be the correct remedy for all petty complaints such as the conduct of the pilot guards. Under the present system we sometimes find that we have no access to the railway officials.

8. (b) Their influence on costs.—We say that the preference system depresses the internal market because we find that the consumer who is able to command wagons is able to keep down prices. In the year 1918 or 1919 jute mills were getting superior sanctions: they could get their coal at Rs. 8 in consequence, but the public had to pay Rs. 15, Rs. 16 or Rs. 17 for similar coal. Under a system of preference the consumer dictates the price if he can provide wagons. In that year there was no public supply for months together. In 1922-23 it was just the same. In February or January there was a scramble for wagons and if the collieries did not accept orders from people who had preference they could not despatch an ounce of their coal. The remedy is to abolish preference and allow proportionate supply. (To Mr. Stuart Williams.)—I mean the supply of wagons should be proportionate to the colliery raisings, (To Sir Rajendra Nath Mookerjee) irrespective of the quality of the coal.

Now prices are down and there is no trouble about wagon supply. The railways are in a position to handle the traffic and there is no justification for any preference.

Mr. Ojha.—The station master cannot make us pay him anything if the wagons are distributed in proportion to raisings.

I do not think there would be any difficulty about managing supplies of wagons when a colliery suddenly shuts down.

Mr. Ojha.—The station master would not allot any wagon at all: the coal manager would publish the list on which wagon distribution would be made *pro rata* and the system would then work automatically.

(*To Mr. Bray.*)—I do not see why there should be any difficulty about a consumer who wants to get first class coal. He has no right to get all his coal from the one colliery: he can go elsewhere for part of it.

Mr. Ojha.—I say that a consumer has a right to buy where he pleases just as we have a right to sell where we can but a consumer has no right to claim wagons if he wants a particular coal.

I do not mean that a consumer has no right to go to a particular colliery for the particular kind of coal that he wants but if the consumer can claim to get all his coal from one particular colliery, we have a right as producers to condemn the system.

Mr. Ojha.—The matter cannot be argued on the basis of the demand for first class coal only. Most consumers can get along with almost any coal but their difficulty is to get wagons. If you brought in the system of supply on proportionate basis people who bought coal could get it away.

Rai Bahadur A. C. Banerjee.—At present we have the custom that a consumer gets a preferential supply, but if to-morrow the proportionate basis was introduced all consumers who wanted first class coal only could go to ten first class collieries and those wanting second class coal could go to ten second class collieries. I think that is fair enough. I do not think that it is either justifiable or legal for Government to continue the present system. Before the war everybody had to do the same thing and had to go to all the collieries.

(*To Mr. Banerjee.*)—We have already explained why we consider that there is a danger of over-production. Our reasons are briefly (1) the slump in industries, (2) the opening up of new fields, and (3) the increased competition of the Central Provinces fields. We do not grudge the extension of new coalfields, but when we have for years suffered from defective railway facilities it is not fair for Government to spend crores of rupees on opening up new coal fields before they have rehabilitated the railway communications with the existing fields. If the crores of rupees spent on developing the Karanpura and Talcher fields were spent on the older coalfields, railway conditions could have been made ideal.

8. Railway freights.—Our figure of 325 miles as the lead for Natal coal is derived from paragraph 44 of the South African Report of 1921-22. I admit that it represents the maximum distance. Our figure of 170 miles for Indian coal is the average distance from the Jharia field; there are some collieries further away, one or two of them. We left out of account the Raniganj collieries which are nearer to the port. We took the farthest figure because it enabled us to present our case more vividly and because it is the Jharia coal which is mostly wanted to meet South African competition.

Mr. Ojha.—We have taken the collieries that are farthest away.

Our figure of 6 shillings and 4 pence for the freight on Natal coal is taken from Sir Charles Innes' speech at page 294, Volume IV, No. 6, Assembly Debates, February the 7th, 1924.

Mr. Read.—We presumed from this that there was equalisation of railway freights: we could not verify the fact.

It is news to us that excluding terminal charges as being unknown factors, the charge on coal on the East Indian Railway from the coalfields to the docks is cheaper than the charge on coal on South African railways for equal distances. We still think that there is scope for reducing rates because the rate in South Africa is a special concession rate. (*To Mr. Legge.*)—As regards our final remarks in our written reply to this question we should be satisfied with an additional rebate of one rupee

per ton from Jharia even if the Asansol rate were left as it is. (*To Mr. Banerjee.*)—Our reason for this is that we do not want to make extraordinary demands on the railways because we know that their costs have also gone up. Also as South African coal is similar in quality to Jharia coal and not to Raniganj coal, the important point is to get down the prices of Jharia coal rather than of the Dishergarh coal. Even if, as you say, the foreign importer wants Dishergarh and Raniganj coal as well, yet the Jharia coal is in a better position to compete because the costs on the Jharia coalfield are less.

Mr. Read.—I think that we are getting off the point. We have to compete with South African coal and so we must send the same class of coal as theirs, namely, Jharia coal. I do not agree with Mr. Banerjee that Raniganj coal is of the same class as some South African coals. The South African coals belong to the Barakar series, that is, they belong to the same series as the Jharia coals. Only the bottom series of the Gandwara rocks are represented in South Africa as is shown by the analysis of the coal and that means that they have practically no exportable coals of the same series as the Raniganj coals.

9. Work of Coal Transportation Officer.—We do not consider it relevant to say that the raisings in 1914 were less by $3\frac{1}{2}$ million tons than they are now. We are concerned only with shipment and there is no case at all for the Coal Transportation Officer so far as shipment is concerned. But if we had to consider his work as a whole the same answer would hold good. We cannot see in what way his work facilitates shipment. He “passes sanctions” for special classes of supplies and he authorises emergency supplies: he does nothing else. If this is a correct reading of his work, then his work affects the coal trade adversely. No officer is needed to apportion wagons now.

I have explained what we mean by the bullying methods of the Coal Transportation Officer. When wagon supplies are tight, he gets shools of applications for special assistance and he has discretion left to him. The case that is represented best gets his assistance and the others do not. (*To Mr. Banerjee.*)—If there was a cut and dried system discretion would not come into the matter. We do not agree that the rake system has increased the aggregate capacity of the railways. It only regulates despatches and it is intended to minimise the amount of marshalling that is necessary. But if we take a day when wagons were supplied full on indent we find that the East Indian Railway can deal with 2,552 wagons, 2,424 wagons, etc., on individual days. If the increase in their capacity were due to the rake system, the East Indian Railway could not handle so many wagons on one day when they were giving wagons full on indent. There is no Coal Transportation Officer in South Africa, but this is not because South Africa is not alive to the importance of industries. They even have drastic provisions for commandeering coal for railways, but as a normal matter they do not have a rationing system.

C. Possibility of economies at the docks.

10. Port charges.—By “enormous increase in terminal charges” we refer to the cent. per cent. increase from 4 annas six pies to 9 annas. Before the war the railways used to pay the terminal charge of 4 annas 6 pies but when it was doubled the extra 4 annas 6 pies was added to the freights, some time in 1921.

(ii) We obtained the figures of port charges at Durban from Captain Cox who is a State Engineer in the Nabha State and who had 12 years' experience in South Africa: we do not know exactly when he was there.

Mr. Read.—(*To Mr. Stuart Williams.*)—We presume that the charges at South Africa and Cardiff include the cost for trimming coal into bunkers because they make no separate mention of trim-

ming but mention only wharfage and loading charges. (*Mr. Stuart Williams.*—I can assure the Committee that they do not include cost of trimming.) We are going on figures which are older than those to which Mr. Stuart Williams refers. Certainly the Calcutta charge includes the cost of trimming.

11. Improvements in handling wagons and results of costs.

(iii) *Mr. Read.*—As regards the improved loading owing to dumping our point is that the contents of wagons are more easily inspected when they are dumped.

(*To Mr. Stuart Williams.*)—We propose that there should be a limited number of shippers who should each be permitted to stock 4,000 tons. The space on which they would put their stocks would be the area used now for stacking. No larger area would be needed for dumping as proposed by us. The area which is there would suffice. We have it from the Traffic Manager that it could carry 80,000 tons. What they should like would be to have the admissible amount increased to 200,000 tons.

(*Mr. Stuart Williams.*—I can tell you that it is not physically possible to stack the amount you suggest alongside the present berths. Moreover, part of the dumping area would be far away from the ship and involve additional handling.) What we suggest is overhead transporters with 5 ton tubs filled by hand labour and carried across to the ship by the transporter. We recognise that this is not immediately practicable.

We propose that the dumping should be the basis of all shipments of coal. There should be stacks ready from which any ship could take on a full cargo. We admit the theoretical possibility of loss owing to double handling, wastage in stacks and theft at the docks.

Mr. Read.—There would be some loss and wastage but it would not be as bad as at the collieries, because we propose to have a limit at the docks. If a man does not ship his coal within two months he would have to remove it from the stacking area. It would not be necessary to leave coal stacked indefinitely because he would take coal from one side of the stack and add new coal on the other. As to the practical difficulties of dumping I have personal experience as regards two cargoes. The Port Commissioners did not refuse to dump but stations were not opened till two days after the boat arrived. The ship must have arrived before scheduled time: I do not suggest that this was a typical case. From our point of view we must send the best coal available because loading from wagons prevents check on the coal in them.

We do not agree that wherever coal is successfully shipped, loading is done from wagons. It is to suit the present conditions, moreover, that we proposed dumping. Even if the railways could work despatches properly, we should prefer dumping because it facilitates check of quality.

(iv) (*To Mr. Stuart Williams.*)—We want to have 24 hours as the time for a wagon between dock junction and dock junction instead of 48 hours. (*Mr. Stuart Williams.*—I would point out that the present figure of 48 hours is not the minimum time or the maximum time but includes back loading.) If we reduce the time to 24 hours we hope to get our empties back more quickly to the mines which would mean more wagons available for us.

(*To Mr. Banerjee.*)—In our experience if we have regular loading we get good loading whereas the rake system means rushing the loading.

12. Loading and shipping facilities.—(*To Mr. Stuart Williams.*)—As regarding tipping, the Federation recognise the practical difficulty that wagons are too big but they do not think that the system would lead to more breakage than at present. In fact they think that in comparison

the amount of breakage would be limited: it should not involve more than with the Beckett's plant, if shoots were employed. But we were comparing it with manual labour; the shoots that we want would be lowered down to the bottom of the hold. Comparison with machine loading in England is not to the point because here the ships loading coal are far bigger than the colliers in the United Kingdom and the fall into their holds is greater: therefore we suggest that the coal should be rolled down through shoots instead of being tipped straight into the hold.

Mr. Read.—We agree that the Beckett plant is the best system for loading if it is used in the manner calculated to achieve the results desired but they open the bucket high above the hold. I have myself seen this being done: it went on the whole time during which I was loading one boat. (*Mr. Stuart Williams.*—There was a case recently in which a ship's officer flatly refused to move the cross bars.) I think the cross bars were in position on the occasion to which I refer.

I do not know of any type of plant which can handle coal both from wagons and from dump, but we suggest some adaptation of the plant at Shalimar by which the coal would be picked by a grab and taken into the hold on a conveyor: the coal left in the wagon which I agree would be about one quarter of the total contents would be removed by hand. I should like to ask if there would be any objection to the ships using their own derricks into the holds: they could pick up 2 to 5 tons off the quay and work in addition to overhead cranes.

(*Mr. Stuart Williams.*—I doubt if this will be possible seeing that the ships normally prefer to pay for the use of the harbour cranes.)

Mr. Read.—But there are no cranes at the labour berths. The Federation does tend to favour increased dumping rather than an attempt to minimise it as suggested by the Port Commissioners.

13. Storage and stacking at docks.—The facilities at the docks may be adequate for the present scale of one million tons per year exported. But they must be improved when there is a recovery to three million tons. There are untold possibilities of coal export in the future but only on condition that facilities are improved.

Mr. Ojha.—The advantage of dumping is that if freight at favourable rates is available suddenly on condition that we load at once we can then take advantage of it.

(*To Mr. Stuart Williams.*)—I do not think that we can possibly get coal down in 48 hours. I do not agree that it is practicable to keep the coal on comparatively cheap ground at the collieries rather than to stack it on expensive ground at Kidderpore.

Mr. Read.—The stacking area at the docks is doing nothing just at present. There is very little coal there now.

Mr. Ojha.—No charge should be made for dumping.

D. Steamer Freights.

17. Steamer freights.—We are not altogether responsible for Statement V, which contains figures given by Sir Robert Watson Smyth. The remark in our written reply that the freight to Bombay never exceeded Rs. 5 a ton represents the experience of our members and is probably more correct, as regards their shipments, than the figures in Statement V. The point is that our members never had to pay more than Rs. 5. I do not think that this can be put down as due to a mistake of memory. As to the present freight level, it is quite true that it is only Rs. 7, but, directly the enquiry is brisk, the rate always goes up.

Mr. Ojha.—The Calcutta Coal Combine found this. The first ship that they chartered was at Rs. 7. Afterwards they had to pay Rs. 9.

Mr. Read.—The rates are now low merely because there is no enquiry.

We may take the average figure at Rs. 8. We would agree to the statement that there has been less increase on steamer freights than on any other item of coal-export expenses, but we would not accept the deduction that there is less scope for reducing costs under the head "Steamer freight" than elsewhere.

Mr. Read.—I personally should accept that deduction provided that freights remain at the present level, *viz.*, Rs. 6-8 to Rs. 7 for Bombay.

Our remark that the advance in freight on coal compares unfavourably with that on other export commodities represents our impression; but we shall try to get figures to justify it.

As to present freight rates, business has been done from Durban to Bombay lately at 11 shillings. The rate to-day from Cardiff is 13 shillings.

Our remark about the Union Shipping Company deliberately keeping down freights is based on what has been told us by Captain Fox: he has personal experience of the results of the competition of that shipping company, but we do not know on what he based his opinion. We have no independent confirmation of it, but we felt that, if we did not bring the allegation to the attention of the Committee, it would not be investigated as in our opinion it certainly should be.

(*To Mr. Legge.*)—It is not our object in our written reply to make out a case against the steamer companies, but we wish merely to point out the disabilities from which we are suffering as against our competitors. This was the whole object of our reply, though we were doubtless trying to prove on the figures about freights as compared with distances that freights should be brought down on this account.

Mr. Ojha.—We certainly do expect a reduction, in order to enable us to compete.

(*To Mr. Banerjee.*)—We agree that South Africa are selling export-coal at unremunerative rates. The reason that they can do so is that they have widely different rates for export, bunker and internal consumption. The proportion of the output of Natal mines, which is used for bunker, is 33 per cent. and they get 11 shillings odd a ton for it. The export-coal they sacrifice at 6 shillings; so, taking 6 shillings as about the marginal price, they make a profit of about 90 per cent. on each ton of bunker coal. If we could do the same then we could afford to export at a loss like them.

(*Mr. Bray.*—I do not see where the disability comes in as regards steamer freight. Freight from South Africa to India is Rs. 7 and freight from Calcutta to Bombay likewise is Rs. 7. You are on an equality with your competitors.)

The disability comes in when you take into account the distance.

Mr. Ojha.—And you must remember that with us freight fluctuates. It is Rs. 7 at first, but next time it will be Rs. 8 or Rs. 9.

With South Africa the fluctuation is always downwards and with us it is always upwards. We have been hard hit and our idea is that if South African coal can be conveyed to Bombay at Rs. 7 odd, it would be a legitimate demand on our part to expect Bengal coal to be carried at a less rate than Rs. 8.

E. Comparative merits and prices of Indian and other coals.

NOTE.—The evidence in reply to question 18 was given by *Mr. Read.*

18. **Comparative merits.**—As regards the analyses quoted in our Statement VI. those for Indian coals come from Colonel Cunyngame Hughes' paper before the Mining and Geological Institute, those for the Japanese, Chinese and Australian coals partly from that paper and partly from analyses made

in Singapore, and those of Natal coal were supplied to me from Bombay: these last are less favourable than the official analyses given in the South African Report.

(*To Mr. Legge.*)—As regards the complaints generally received by the Committee that all Indian coals have too high a percentage of ash, it is evident that the consumers in question have been given a mixture of coals chosen to meet a particular price: also the ash-percentage depends on how you calculate the percentage. You often find people talking of ash percentage when they mean the percentage of ash removed from the boilers in baskets instead of the percentage calculated on a scientific test; different engineers will calculate in different ways. Also I should mention that the bad mixtures exported are due not to the coal companies but to middlemen coming in and exporting cheap coal to suit the prices which they have to meet.

(*To Mr. Whitworth.*)—Practically all of the analyses of Bengal coal in Statement VI come from Cunynghame Hughes. It is true that they were published sixteen years ago, but why should the analyses vary with time? I dispute the contention that seams being worked in any particular colliery vary with time particularly in the Jharia coalfields. They are analyses of coals from particular mines and not average samples of all the coal described by the name given. The samples in some cases were taken by Colonel Cunynghame Hughes himself, but it is true that some were sent to him. Some of his analyses were abnormal and gave an unusually small percentage of ash, e.g., as regards inferior Raniganj coal he gives a wrong percentage of ash for Benali. I should, however, accept 11·04 as a fairly correct ash-percentage for inferior Raniganj, by which I mean the same coal as is called superior second class Raniganj in our reply to question 25. This analysis was of a particular seam. The average ash percentage would be between 12 and 13 for coals of that class.

NOTE.—The remainder of the evidence was given by Mr. Purkayastha except where otherwise stated.

21. How competition can be met.—We do not agree that if a duty was imposed, the result would be increased competition in foreign markets. If we became masters of our own market, we should not mind being left to do our best to fight our way into foreign markets: but we might have to claim a bounty out of general revenues if the duty paid by foreign coal was not sufficient to meet the cost of the bounty.

Mr. Ojha.—We should be justified in this demand because during the war and afterwards our industry was controlled and prevented from making its just profits.

(*To Mr. Banerjee.*)—The reason why Indian coal is valued at less than South African coal in foreign markets is that we have to wear any cap which the consumers choose to put on our head. It depends on how they value us, not how we value ourselves. There will have to be Re. 1 difference on what we consider quality for quality because of the prejudice which was created by the imposition of the embargo.

Mr. Read.—It must also be noticed that some people have been sending Dishergarh coal for use at Bombay in boilers with huge forced draught and it gives dissatisfaction as being altogether unsuited for the purpose.

(*To Mr. Banerjee.*)—It is not right to say that the Federation was a party to the embargo on export. The thing started with a joint meeting of the Chamber in June 1920 when Sir Charles Innes pointed out that pressure on the Railways necessitated deflecting as much coal as was possible to the sea route: the capacity of the Kidderpore Docks was limited, and, therefore, Government decided to control export and introduced a measure of export-control in 1920. We agreed so far, but we do not suppose that Government consulted anybody before they took the final step of complete

prohibition of export on the 9th June 1921. Also even if the Federation had agreed to the complete embargo, I should point out that, when as early as April large shipments of foreign coal were coming into Bombay, we took the earliest opportunity of asking Government, in August 1921, to remove the embargo. We do not agree that the demand for an import duty on the coal is a demand for assistance to an industry which does not deserve protection. We would advance three arguments why we should be assisted—

- (1) the systematic control by which we have been hampered;
- (2) the embargo on export; and
- (3) the bounty given to foreign coal.

We stick to our statement that we are a much-wronged and much-maligned industry. We say that Indian coal is in need of Rs. 3-4 assistance against the margin of Rs. 5 in favour of foreign coal, because if, as we expect, the duty leads to strengthening the home market, we should be satisfied to make sacrifices for recovering our overseas markets.

22. Possibility of new overseas markets.—Our figure of over 100,000 tons imported into Aden is taken from a statement in the Appendix to the Year Book of the Indian Mining Federation. We agree that it appears to be a misprint and that the decimal point has been misplaced.

Mr. Read.—We know that in Sabang and Sumatra the Dutch Government coals are competing so strongly that competition with them will be difficult; but our argument is based on the idea of a bounty. We realise that a countervailing duty would not help us in Singapore or Colombo.

23. Special assistance to other coals competing with Indian.—We got the figure 18s. 2d. from Mr. Chadwick's statement at the conference with the Federation on the 23rd August 1923 (p. 15 of the Report). We consider ourselves justified in talking about "dumping prices" (although South Africa may be charging more for railway freight than are the Indian railways per ton per mile) in view of the bounty which they receive. As regards the propriety of characterising a railway freight rebate as "bounty," I am merely quoting the language of the Government of India in their letter of the 25th of May to the Secretary of the Indian Merchants' Chamber, where it is said that "this rebate is an indirect bounty." This being so we are justified in asking for assistance under section 8 (a) of the Indian Tariff Act. In our opinion it is an obvious case of bounty when there is one rate for export, another for bunker, another for local consumption, and when they are exporting coal more cheaply than they sell it locally.

F. Grading, inspection and certification of coal.

25. Classification into grades.

Mr. Read.—(To *Mr. Banerjee.*)—The question whether Gopinathpur, Rajapur and Laikdih coals are really of the same class as others included under 2nd class Jharia is one of geological correlation. Gopinathpur is generally known as a 3rd class coal. The first duty of the Grading Board would be to issue a list of seams, collieries and coals classified by quality. (To *Mr. Bray.*)—It would not be an improvement to class the coals as "Selected Jharia," "1st class Jharia," "2nd class Jharia," because the description "1st class" would then be misleading. I should abolish the term Dishergarh altogether as a separate grade, because as now used, it perpetuates a big mistake. Dishergarh and Poniat, which is sold as Dishergarh, are entirely different coals with different analyses. It is necessary to do away with the fetish of names and get back to facts.

26. Measures to effect grading.—Legislation would be necessary even the coal trade were agreeable to have grading.

Mr. Read.—Legislation would mean recognition and not compulsion.

If there was no legislation, what would there be to prevent people sending their ungraded coal?

Mr. Read.—Is it not probable that people will take coal without certificate and claim it had one?

Mr. Ojha.—Why should not a man export coal to suit the price? What is there to prevent him doing so?

It does not follow that because the Association and the Federation could combine for the establishment of a Grading Board that they could combine for all other purposes. Grading is an important matter and the feelings of the two bodies on the subject correspond. It is the opinion of the Federation that there should be no official personnel on the Board. The Board could select its own President.

Mr. Read.—The Federation think that there should be a Board that is connected only with the Association and themselves. When you get an official in, you get a lot of unnecessary talk: every interest concerned has its own grievance and voices it. There would be no difficulty about having a President from each of the two bodies in alternate years and the Board could have its own technical staff as its own servants under its own control.

(*To Mr. Bray.*)—We do not want any consumers on the Board. The ideal arrangement is that shippers of coal should give certificates on the coals that they ship. That is what the Witbank Coal Association does. We need not discuss the number of members.

Mr. Read.—Actually we suggested 3 members from each association, but it does not matter what the machinery is so long as it is under the control of the Board.

We do not consider that the colliery interests will be sufficiently represented if the suggestions of the Indian Mining Association were adopted.

Mr. Read.—My personal view (but it was overruled) was that the technical people from upcountry also should be represented on the Board, that is we should have some colliery managers on it. A Board of 5 is not large enough.

I should not agree to the Chief Mining Engineer alone making samples and analyses. That should be left to the Grading Board.

Mr. Read.—(*To Mr. Whitworth.*)—You would not have to grade all the collieries: 50 per cent. of them would not come in. To grade the rest would take from 8 to 12 months, but you could go ahead at once, because we already have some knowledge of the seams and collieries. Those collieries of which we have no knowledge would have to wait. I agree that immediate action is necessary. Every day's delay means greater difficulty in getting back into the foreign markets and greater danger in our own markets; so temporarily we might use the Chief Mining Engineer's staff. If I were a consumer, I should value the decision of a board of sellers just as highly as that of a board with some Government servants on it, provided that the sellers were a responsible body. South Africa have no Government official on their Board, which has its own Mining Engineer and its own Analyst.

30. Meeting of costs of grading and inspection.—We have not worked out what would be the cost of the organisation of the Grading Board, but taking a cess of 2 pice a ton on the 3 million tons exported before the war (which did not include coal bunkered at Calcutta) you would get Rs. 93,000 per year and that should be enough.

(*Mr. Whitworth.*—May I point out that in the 3 million tons are included 1 million tons of Government coal on which a cess would not be payable, so the estimate which you give will have to be modified.)

Mr. Read.—I would approve the use of the Chief Mining Engineer's Department for inspection of the coal if costs are limited. We think all inspections should be made at the docks and that inspection at the colliery serves no purpose. My personal view is that inspection on the coalfields does more harm than good. Wagons start loading at 8 A.M., the Inspector comes round between 9 and 12, and sees a few wagons partly loaded. The result is that many collieries take no responsibility at all about loading, because they think that the inspecting staff has done the work. The responsibility, however, should be imposed on the manager. At the docks every wagon can be inspected and the bad coal rejected without difficulty. You limit the expenditure if you can confine the inspection to one end, and though it is true that to reject coal at the docks means the waste of the wagon which brought it down there, but that will not often be repeated.

Rai A. C. Banerjee Bahadur.—As matters stand now with inspection at both ends, my view is that this should be considered as a very safe method; but the general feeling in the Federation is that inspection at the docks only will be an improvement. Personally I differ from them. (*To Mr. Legge.*)—Even where, an Inspector comes round, the colliery manager is responsible and has to inspect the loading.

Mr. Ojha.—Or is supposed to do so.

Rai A. C. Banerjee Bahadur.—The manager has a staff of loading Babus, etc. Over and above that he continually does go and sees the loading. My experience is that the inspectors do go and see the wagons between 8 and 10 o'clock and sometimes also in the evening.

28. **Compulsory versus voluntary grading.**—The reason why we say that Government should not enforce compulsory grading unless they have granted a bounty or protection is that we do not approve of compulsory grading, but if Government give their assistance to the industry, they will naturally want to see that consumers overseas get the right sort of coal.

Mr. Read. The position is that if Government force grading upon us, we want a *quid pro quo*. We accept grading as on a voluntary basis, not otherwise.

**J. MACKIE, Esq., Superin'tendent, Eastern Coal Company, Limited,
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WRITTEN STATEMENT.

A. Possibility of economies on the coalfields.

1. **Reduction in cost at pit-head.**—By increasing output to meet a steady demand with a regular wagon supply, the cost of coal at the pit-head would automatically be reduced.

A strong combination for the reduction of certain rates might assist in lowering production costs.

In my opinion the cost per ton will decrease in the future if modern and economic mining is maintained.

2. Effect of recent increases in wages.—As a result of the 1920 increases and since, the cost of production has risen 50 per cent.

3. Effect of legislation.—It is not yet possible to estimate the effect of recent and proposed legislation but I consider present legislation is already costing about 3 annas per ton.

4. Possible savings in stacking charges.—When coal has to be stacked more than the actual costs of labour must be considered. The extra handling alone may cost anything from 2 annas per ton at a colliery with no loading plant to 5 annas per ton at an up-to-date colliery.

In addition to this must be considered the loss from deterioration and disintegration which means at least Re. 1 per ton.

5. Wastage from stacking.—The actual wastage of coal from deterioration and disintegration in stock varies according to—

- (1) quality of coal,
- (2) height of stack,
- (3) length of time in stack

and may be taken at from 10 per cent. to 25 per cent.

The risk of considerable loss by fire should also be remembered.

6. (a) Improvements in wagon supply.—The present system of distribution, etc., of wagons is sound enough but a general acceleration is most necessary.

The time taken to work sidings is a disgrace and points to the speed of handling wagons all round.

(b) Their influence on costs.—With greater speed of handling wagons a better wagon supply would result and most of the losses in 4 and 5 would be avoided while a better quality of coal would be available for shipment.

7. Type of wagons.—Open wagons only should be supplied for coal despatches, especially to the docks and with plenty available the results would be—

- (1) quicker loading,
- (2) cheaper loading,
- (3) better loading.

and hence a reduction of cost at pit-head.

8. Railway freights.—Railway freights are undoubtedly too high and unnecessarily so. With quicker handling of wagons, cheaper rates could be arrived at by getting more tonnage miles per wagon per month.

9. Work of Coal Transportation Officer.—It is only as a result of congestion on the railways that special control of wagons is necessary. With a plentiful supply of wagons resulting from quicker handling, all demands for wagons would be satisfied and no special control would be needed.

C. Possibility of economies at the Docks and coal depôts.

13. Storage and stacking at docks.—I consider that while the present irregular handling of wagons continues, stacking space at the docks free of charge is most necessary.

About 75 per cent. of the ship's tonnage should be stacked in readiness for the ship to enable loading to be done quickly and avoid detention of wagons.

E. Comparative merits and prices of Indian and other coals.

18. Comparative merits.—My experience with other coals is slight but from analysis, best Indian coal is practically equal to African coal and about 90 per cent. of the value of Home coal in steaming qualities.

21. How competition can be met.—With the best Indian coal as in 18, if only this quality is exported and at a favourable rate, competition need not be feared.

With a ready market and good wagon supply, fresh cut coal of the best quality would be available.

F. Grading, inspection and certification of coal.

24. **Grading of coal.**—I consider grading most necessary in both export and bunker coal.

25. **Classification into grades.**—I would arrange the various grades according to analyses taking into consideration mostly, Calorific value and ash content.

Coal high in moisture should occupy a lower grade.

26 and 27. **Measures to effect and to control grading.**—To carry out the grading, a Board should be formed with representatives of the coal trade, consumers, and one expert adviser.

28. **Inspection and certification.**—The Grading Board would analyse all seams and class them accordingly.

Inspection of coal loading at collieries is useless. Tests of coal on arrival at the docks is essential.

(Oral Evidence—January 13th, 1935.)

I have four collieries under my charge giving an output of 450,000 tons per year. All are in Jharia. Amlabad colliery is in the course of development.

I have had 21 years in coal of which 18 have been in this country.

A. Possibility of economies on the coalfield.

1. **Reduction in cost at pit-head.**—I should say that Rs. 4-10 is a reasonable figure for raising costs on the Jharia field. We work on different lines and show our costs differently from other Companies.

We do not install plant out of capital: everything is charged to revenue at once.

(To Mr. Bell.)—We divide our costs into "Ordinary" and "Extraordinary." The latter head includes buildings, plant and extensions which, in other Companies, would be charged against capital.

I do not know what other Managing Agents charge.

Royalty varies from 3½ annas to 8 annas. Our highest is 6 annas at Amlabad.

It is difficult for me to give a reasonable rate including all charges for an ordinary Jharia colliery as it depends on so many factors,—plant, block, royalty, Managing Agents' charges. It might be over Rs. 5 per ton.

(To Sir R. N. Mukherjee.)—We do not include any provision for a sinking fund to my knowledge.

(To Mr. Banerjee.)—I should put the costs on the Raniganj field at Re. 1 higher but I have had only small experience there. I do not agree that costs should be higher on a small colliery with a small output. The small colliery should have a capital in proportion. Increased output would decrease costs in a small colliery just as it does in a large colliery. In a 2,000-ton colliery, that is, a colliery laid out to deal with 2,000 tons per month, the costs should not be higher than in a large colliery. The expenditure on the property, plant, staff, etc., should be in proportion to the size.

(To Mr. Banerjee.)—I do not know of any combination in the past to lower the rates on certain items. I do not remember the occasion.

Mechanical coal-cutters.—To some extent it has been possible to meet the effect of reduced output per person by capital expenditure in the introduction of mechanical coal-cutters and the extension of the use of electric power. Mechanical coal-cutters involve a direct extra cost of about 12 annas per ton including machinemon and drillmen's wages, explosives, renewals and current consumption.

We put in machines in spite of the increase of cost of cutting, as, without them, we could not get the output owing to insufficiency of labour and slow development. They favourably affect the ultimate cost per ton by giving a larger output. Most collieries get only a percentage of their output from machines so that the total cost per ton is less than it would be if all coal were cut by machines.

The machinememen are undoubtedly paid too highly but a reduction of their wages would not affect the cost per ton on the whole output very much. We had to offer high wages to machinememen to attract men to that class of work, which is not pleasant. A reduction of wages could now only be made by a general combination.

We pay five annas per tub for loading machine-cut coal and this is equivalent to seven annas per ton. For loading wagons on the surface, we pay only two annas per ton so that a considerable reduction in the rate for machine coal loading could be made by combination. A machine worked by 3 or 4 Punjabis, with two drillmen, will produce 100 tons per day at least. This can easily be loaded by 50 loaders and these mostly women. Against this it takes 60 miners with 60 to 70 loaders (women) to produce 100 tons by pick.

I might mention that a machine can produce up to 200 tons per day when required and when sufficient loaders are available to clear the necessary galleries.

(To Mr. Legge.)—We tried Anglo-Indian labour on a small scale but they did not prove a success and soon left the colliery. We had four men loading coal by shovel in level galleries where the lines were laid up to the coalface.

We first installed mechanical coal cutters at Kankanee in March 1921 and now have them at all our collieries. We have 10 at work and one on order.

In a mine with machines, the contractor's rate is Rs. 2-2 including machinememen, drillers and explosives as against Re. 1-10 for hand-cutting. (This is an increase of 8 annas only, but 4 annas is required for renewals, oils, electric current, etc.)

The introduction of machines has considerably increased our output and decreased our total cost. So far only a portion of our output is obtained from machines.

Bhowra has about 40 per cent. machine cut coal.

Kankanee has about 20 per cent. machine cut coal.

Pootkee has about 75 per cent. machine cut coal.

Anilabad has about 100 per cent. machine cut coal.

By doubling our output, a saving in one month of Re. 1-9 per ton was affected and in another by a 78 per cent. increase, 15 annas per ton was saved.

(To Mr. Banerjee.) By "economic mining" in the 3rd paragraph of my written reply to question 1, I mean the reservation of the resources of the properties, i.e., by avoiding wasteful methods of mining and aiming at the extraction of the largest possible percentage of the available coal.

Hydraulic stowing is an instance. By this method of working we are getting roughly 99 per cent. of the coal. With ordinary pillar cutting it may be possible to recover at best 75 per cent. while the risk of fire and subsidence is always present. Sand stowing costs us about Re. 1 per ton of coal raised from the pillaring area. I do not agree that this means 20 per cent. on our working costs. I do not consider 80 per cent. of the available coal can be recovered by ordinary methods of pillaring everywhere. You might get a very high percentage from one or two pillars and then have heavy losses owing to weights and subsidence. This might be attributed to bad mining. We are hydraulic stowing in one area only at present.

(To Mr. Whitworth.)—If we were not sand stowing we would probably get no more than 30 per cent. of the coal from the area. The pillars are

over 15 years' old while the seam is 40 ft. thick. Thus sand stowing gives us over 60 per cent. more coal. We are losing practically no coal.

(*To Mr. Bell.*)—The figure of Re. 1 per ton does not mean Re. 1 on every ton raised from the colliery but only on the tonnage recovered by sand stowing. We raise 3,000 tons monthly from the area out of a total of 25,000 tons in a good month, so that the cost is about 2 annas per ton on the total output. By working in this way we preserve the resources of the colliery and get more years of work from it.

The suggestion that economy might be served by running rails up to each working face would be possible only in some mines. In a seam that is flat or nearly so, it would apply. We have rails in each level and within about 50 feet of the working faces.

(*To Mr. Legge.*)—The 50 feet represents the distance from the levels into the working faces either rise or dip. To take tubs into each working face would mean the introduction of many haulages and jigs as all our seams are on an inclination and, in most cases, very steep.

Concentration of working on small areas is already secured where we have introduced machine-mining. With ordinary miners it is necessary to have a large number of working-faces to secure an output. With miners it may be taken that one gallery working night and day produces 3 to 4 tons only against 18 to 20 tons from a machine working one shift. Thus by hand work it takes 25 faces for 100 tons output against 5 or 6 faces for a machine for a similar output.

We have not yet introduced a compulsory system of shifts but are doing our best towards that. I am doubtful of its wisdom in cases where the mining population is not settled as, with labour coming to work daily from distant villages, it might prove disastrous to force them to attend at a certain hour. This would apply mostly during cultivation and harvest.

My summary of the remedies necessary would be increased output and a combination to reduce certain rates as well as improvement in wagon supplies.

More labour is available and can be recruited but enterprising contractors who do recruit from distant sources, get their labour stolen by contractors who, vulture-like, recruit on the coalfield.

2. Effect of recent increases in wages.—(*To Mr. Bell.*)—Early in 1920 the contractor's rate was Re. 1-4-6 and now it is Re. 1-10-6, an increase of 6 annas per ton.

As regards increases due to legislation, I put this about 3 annas per ton which includes costs resulting from the Jharia Mines Board of Health, the Water Board, housing programmes to meet the Board's requirements, the Compensation Act and the Registration of Labour.

The net result of the increase in wages to labour has been a reduction of output per head. I should not say that the labour has deteriorated but simply that the Indian miner is content with a fixed income. If he can earn sufficient money in 3 days through the higher rates, he has no incentive to work 5 days. The standard of living is gradually improving but very slightly and not at all proportionately to the increase in wages and rates.

3. Effect of legislation.—Prohibition of female labour would cost a lot. At present more than 50 per cent. of our machine cut coal is loaded by women making easily Re. 1 per day while practically all the coal cut by hand is loaded by women. The miner would need higher rates to enable him to keep his wife at home as he would not work harder or longer to earn more.

5. Wastage from stacking.—In my written reply I took the figures of 10 per cent. to 25 per cent. from what actually results at our own collieries. Their position, however, is different from others in that our total output is hooked for the docks for the Company's ships and it is only the wagon and transport difficulties that make it necessary for us to put coal into stock at the collieries.

(To Mr. Whitworth.)—With a regular supply of wagons assured most collieries would be induced to put in mechanical loading plant and this would cause a saving of labour. Only up-to-date collieries with loading plant would gain the full advantage of regular wagon supply as, with head loading, the coal must be stacked on the ground at any rate before loading.

With stacking the following loss from deterioration alone results:—

	Rs.
100 tons of fresh cut coal sells at, say, Rs. 7 . . .	700
After stacking for a period and neglecting other losses you recover—	
75 tons coal at Rs. 7	525
25 tons slack at Rs. 3	75
	<hr/> 600 <hr/>

Thus you lose Rs. 100 or Re. 1 per ton.

My remarks refer to good coals only which unfortunately waste most.

B. Possibility of economies in transport to Calcutta.

6. (a) **Improvement in wagon supply.**—(1) *Delays at sidings.*—My remarks about the time taken to work sidings are based only on what I have seen on the spot. It is only thus that you can realise how slow the working is: and there must be some remedy possible. I refer to the time taken from the moment the pilot arrives at the siding until it goes out again. It takes, one might say, an hour to do a quarter of an hour's work. I have not actually timed it. What is wrong is merely the dilatory methods of the subordinate railway staff, which mean loss of time and of engine power.

(To Mr. Legge.)—The delay is in the excessive time that is taken in getting into and out of sidings and the time lost standing at points.

(2) *Delays at weighbridge.*—(To Mr. Whitworth.)—The time taken between Bhowra and the Docks depends on how long the wagons are kept at Bhowra. It may be as much as a fortnight whereas, in the old days, the journey did not take more than 3 days. I have given figures (*not printed*) showing the actual periods.

I judge from the time it takes to get the weighment papers that there must be delays at the weighbridge. We have a representative at the weighbridge but the result on overloading and underloading is apparently nil. We have always had him there so cannot judge what would happen if we dispensed with him. He stays there permanently, a house being rented for him. The object is that he may check the weighments and assist in getting our documents back quickly.

(To Mr. Legge.)—All wagons are not delayed but a large number quite frequently are. At Bhowra alone we are about 200 wagons behind in our weighment returns at the end of the week, i.e., 200 are still unweighed out of a total of 300 despatched. We have recently been despatching over 50 wagons daily from Bhowra alone.

(To Mr. Banerjee.)—All these wagons have to be invoiced by the Bengal Nagpur Railway. The number includes exchange wagons through Pathardih. At Kankanee, which is worked from Kusunda, the number delayed is comparatively small. We have no reason to complain about the East Indian Railway.

(3) *Weighbridges at collieries.*—We once asked the Bengal Nagpur Railway to instal a private weighbridge at Bhowra for our Coke Plant. It would be a great advantage to the Railway to have a weighbridge at a large colliery such as Bhowra where we can handle rakes which would go direct to Garden

Reach and Shalimar. With only two points of despatch, trains can be made up at the colliery and sent straight to destination.

(*To Mr. Whitworth.*)—The reason why we did not go on with the proposal for the weighbridge at Bhowra was that the railway gave us no encouragement. At Bhowra we could load, weigh, marshal and despatch rakes. The proposal dates back some years. It did not break down owing to the difficulty of arranging for a locomotive: the pilot could do the work.

We have a fine yard there now and plenty of accommodation: in fact the railway has recently built a station at Bhowra. The cost of putting in a weighbridge should not be very large. (*Mr. Stuart Williams.*—The cost of the machine now is between Rs. 9,000 or Rs. 10,000.) As it is, the trains can be made up at the colliery. We have ten sidings in all including the Coke Plant siding.

(4) *Load lines.*—We experience much trouble with load-lines on wagons. There are too many load lines and too many different types of wagons and a standard wagon for a standard weight would save both time and money. The load line must depend to some extent on the specific gravity of the coal but marking the present multitudinous types of wagons when supplied at the collieries would be a serious matter. A special staff would be required to mark them and though it could be done, I do not see why we should be expected to go to the expense of doing it. We have had much trouble with underloading and overloading and have been asked to pay heavy penalties on exchange wagons.

7. *Type of wagons.*—We have tipplers and gravity screens at Bhowra and Pootkee and plans are ready for Amlabad where we propose to have tipplers, screening plant, picking belts and bunkers. The tipplers unload the tub by tipping the coal over a screen into the wagon or on to a picking belt. If you have a variety of closed wagons, it is hard to design a standard plant to load them. The mechanical plant will not work well unless with open wagons: if we do not get them we shall try to improvise some method of loading covered wagons but it will be difficult and slow: we shall not be able to load fully and shall have to complete the loading by hand.

(*To Mr. Bell.*)—The financial results of the supply of open wagons depend on the regularity of the supply. If the supply is so regular that stacking can be avoided we shall save Re. 1-8 per ton and shall have real economy. This Re. 1-8 will be made up by the cost of stacking and reloading, and losses by deterioration and disintegration—in fact the losses referred to in my replies to questions 4 and 5. We get at least 50 per cent. of covered wagons and with a regular supply in this proportion we could get a saving of 8 annas to 12 annas per ton.

Open wagons of a standard type would facilitate mechanical methods of emptying wagons at the docks.

(*To Mr. Stuart Williams.*)—As regards the practical difficulty at the docks that covered wagons are needed for perishable upward traffic, I presume some collieries with no up-to-date plant would still be able to deal with covered wagons. The open wagon is essential for mechanical plant and why should collieries go to the expense of erecting such plant if they cannot get wagons to suit them? There is only one point at Bhowra which has no tippler and that is the point which gets most open wagons. The railway holds that it takes too long to marshal the wagons to suit our requirements.

(*To Mr. Banerjee.*)—We want high-sided open wagons. This type of wagon presents no difficulty in loading by hand if you build wharf-walls along the sidings: we find no difficulty in loading low-sided or even covered wagons at the wharf-walls.

8. *Railway freights.*—I say that railway freights are unnecessarily high because they could be reduced if there was a general speeding up which would result in more tonnage being moved by each wagon. Probably the railways would not agree, but, if they are content with present profits,

increased profits would result from the speeding up and a reduction in freight could be made.

9. Work of Coal Transportation Officer.—(To Mr. Banerjee.)—I do not say that the Coal Transportation Officer can “remove” the congestion even if better marshalling yards are not provided. I do not want more wagons to be provided as this would cause further congestion but I want the present wagons to be used more efficiently.

(To Mr. Banerjee.)—What we want is a general acceleration on the railway but the improvement had best be left in the hands of the Railway Company. Although we run into stocks occasionally, I find the wagon-distribution sound enough. In spite of having standing orders, I had 100,000 tons in stock 8 months ago. I agree that wagons should not be left loaded in colliery sidings. We load in less than 10 hours and do not work at night. With a regular wagon supply at regular hours, quicker loading could be done. The wagons are drawn out each morning, or are programmed to be. Kankane Colliery is on the East Indian Railway and the other three on the Bengal Nagpur Railway.

It would seem to be quite fair, as you suggest, that wagons should be distributed on the raising capacity of the collieries. But if there are no orders, what is the good of wagons being supplied?

(To Mr. Bell.)—I should not say it is fair to distribute wagons as above irrespective of the quality of the coal. The quality of the coal will automatically govern the need for wagons. I assume full orders at the various collieries under comparison.

(To Mr. Banerjee.)—I suppose that collieries, which get rakes only occasionally, do have difficulties with loading and that every colliery is not able to work rakes efficiently. But I have no experience of such collieries.

C. Possibility of economies at the docks and coal depôts.

13. Storage and stacking at docks.—(To Mr. Stuart Williams.)—I recognise that loading would be much easier at the docks if there were no dumping and it would be better for the coal; but it would only be possible if wagons were plentiful. My opinion refers to the present irregular conditions. It would undoubtedly involve less breakage if there were only one handling.

This question of conditions at the docks is really outside my sphere.

(To Mr. Banerjee.)—Dumping means quicker release of wagons if too many are arriving at the docks at once but not if the wagons arrive regularly and as required.

E. Comparative merits and prices of Indian and other coals.

18. Comparative merits.—(To Mr. Banerjee.)—By “best Indian coal,” I mean first class Jharia and Dishergarh coal. We have found that a mixture of these makes the best steam coal.

F. Grading, inspection and certification of coal.

25. Classification into grades.—(To Mr. Banerjee.)—The coal in one seam varies in Jharia according to the district in which it is found and you cannot grade coal only by the number of seam. Every seam would be analysed for grading by samples from roof to floor. In a thick seam working the top half and the bottom half, both of different qualities, the tests from 50 wagon loads of such coal should work out according to the average analysis: except, of course, in the case of the majority of the wagons being loaded with, say, the top half.

As regards the time it would take to analyse the coal in various collieries I think the Chief Mining Engineer, Railway Board, knows already the analyses of at least most of the good seams. It would take a considerable time to get the Board working.

28. **Inspection and certification.**—(To Mr. Legge).—We have no loading inspectors at our collieries, i.e., we have no special staff for the purpose beyond the Managers and Assistants. The coal is inspected at Garden Reach and Shalimar.

(To Mr. Stuart Williams).—If we get a regular supply of wagons and if the wagons could be traced from the colliery to the ship's side and if it could be guaranteed that the coal was transferred from wagons to ship without admixture, then, even although the seam had been tested by the Board and graded, I still hold that occasional analysis at the docks (and this is what I meant by "test") would be an advantage. There would not be time to stop the coal and reject it if the loading were from wagons and test were made at the docks but penalties could be imposed. The tests could be made at the collieries under these conditions too.

(To Mr. Whitworth).—It is difficult for a man going round a dozen collieries in a day to inspect even 300 wagons per day. My written reply refers to the present methods of inspection.

**N. O. C. MARSH, Esq., Assistant-in-charge of Coal Department,
of Messrs. Mackinnon, Mackenzie & Co., Calcutta.**

Written reply to questions intended to explain the discrepancy between Mr. A. C. Campbell's remarks in Colombo that the Indian coal sent down there by Messrs. Mackinnon, Mackenzie was satisfactory and the general complaint that the quality of Indian coal was variable and its condition bad, with excess of smalls and dust, owing to defective loading at Calcutta:—

1. What coal do you send to Colombo?

A selected mixture of Jharia and Raneeunge from the following collieries, Bhowra, Pootkee, Kankanee, Amlabad, Chotodhemo, Bararee, Lodna, Jama-doba, Sodepur, Sanctoria, Aldih, Bansdeopur, Bejdih, Tetulmari, Kendwadih, Loyabad.

2. How do you insure that only good quality coal is sent out? What check is there at the different collieries or at the Docks?

We endeavour to maintain the quality exported by adopting the mixture described above.

By arrangement with the Chief Mining Engineer, Railway Board, all coal despatched on our account is inspected at colliery by State Railway officials. Wagons on arrival at Kidderpur Dock are similarly inspected, while arrivals at the Company's depôts are examined by the Company's officials. Coal not up to contract is rejected.

3. Do you take any special precautions to avoid breakage when loading coal in Calcutta?

No special precautions are taken to avoid breakage when loading.

4. To what do you ascribe the absence of smalls and dust in your coal?

To the high grade of coal purchased, and to the system of inspection to which it is submitted at despatching collieries and in Calcutta.

**N. O. C. MARSH, Esq., Assistant in charge of Coal Department
of Messrs. Mackinnon, Mackenzie & Co., Calcutta, and**

**J. YOUNGER, Esq., Coal Depot Superintendent of the B. I. S. N.
Company.**

(Oral examination—January the 7th, 1925.)

(1) **Coal sent to Colombo.**—The collieries named in my written statement all supply "Dishergarh" coal, "Selected Jharia" or "1st class Jharia Coal."

The proportion in which we mix the coal depends on the kind of bunkering for which it is despatched:—

- (i) for ordinary bunkering—we would send 50 per cent. "Selected Jharia" and 50 per cent. "1st class Jharia"; that is a good average bunker coal for Colombo, Rangoon or Madras.
- (ii) for mail bunkering—we would despatch 50 per cent. Dishergarh and 50 per cent. Bhowra, 14 seam, or Bararee, or a coal of that description; that is, a mixture of Dishergarh and the best of Jharia coals.

Long experience on our Rangoon mail steamers has shown us that the best mixture for fast mail steamer work is 50 per cent. Dishergarh and 50 per cent. really good Jharia; this is better than either class of coal taken alone. For our Rangoon fast mail service we use for bunkers Bhowra coal and Equitable coal in the above proportion.

(To Mr. Banerjee.)—The method in which we do our mixing will best be understood if I explain how we are loading a steamer now which is to carry B. I. stocks to Karachi. Two holds are loaded with Dishergarh coal only, the other holds are loaded with Bhowra, Kankanee, Bhulanbararee, Bararee and Standard, i.e., 1st class Jharia and Selected Jharia. The mixing of these two latter qualities is done by taking the coal from different stacks or different wagons, as they come in. We stack our coal in separate stacks for (1) Dishergarh coal and (2) Jharia 1st class and Selected Jharia at Garden Reach. When the ship reaches Karachi the Dishergarh coal will be stacked separately for fast mail steamer work, and the other coals, 1st class Jharia and Selected Jharia, will be stacked together. The Dishergarh coal with the other two coals will then be mixed at Karachi, as required.

When we wish to mix Dishergarh with other coals at Calcutta, as we do for bunkering, we mix them as nearly half and half as we can by baskets. When shipping to outports we very rarely mix Dishergarh coal with other qualities here, because we do not use the former quality for ordinary bunkering; we therefore ship Dishergarh coal separately, as far as possible.

(To Mr. Banerjee.)—It is a fact that there are seams of different classes of coal at some of the collieries named in my written reply. None the less we take from them only first class coal, as already explained. As regards our own collieries we are working only the best seams; for example at Bhowra we are working practically nothing but seams 11 and 14 for fast mail bunkering, and 12 and 13 seams for ordinary bunkering. As to the coals obtained from other companies our contracts are almost exclusively for first class coals, while as to the collieries on the lower field we are taking coal only from the Dishergarh seam.

(2) **Check on quality of coal exported.**—The first four collieries in my reply to question No. (1) are our own collieries. We buy large quantities from the other collieries named. Our turnover would be between 45 and 50 thousand tons per month and of this about 60 per cent. would be from our own collieries. The Chief Mining Engineer's department inspects the coal that we get down from outside collieries but not that which we obtain from our own; we find the system of inspection by his staff eminently satisfactory. The check exercised at Kidderpore dock is examination of wagons by the State Railway representative, in addition to that of our own Superintendent. When we reject coal we dump it and advise the suppliers that we refuse delivery. It happens very rarely that we have to reject coal which is not up to the contract standard. With the system that we enforce of inspection both at the collieries and at the docks, the suppliers are very careful about their methods of loading and the need for rejection is extremely slight. The reason why we have the coal examined at the docks as well as at the colliery is that sometimes loading at the collieries is done at night, or at a time when

supervision there is difficult. The inspection at collieries does not debar us from refusing delivery at the docks. If the percentage of dust is only slightly in excess of specification, i.e., 10 per cent., we may or may not take delivery on a valuation. The object of inspection by the State Railway representative is to check quality, appearance, loading and size only; he does not do any analysis of the coal; he inspects the wagon labels and checks against advices from collieries.

We would not go back to any other system. We are perfectly satisfied.

(To Mr. Banerjee.)—As regards wagon-loads of our own coal which do not come up to the standard, i.e., in which the percentage of dust and smalls is over 10 per cent., we would call for a report from the colliery Manager concerned. If our Coal Superintendent advises that a consignment contains as much as 15 per cent. of dust we send a copy of his report to the colliery. As to the coal received from outside collieries the report on the percentage of dust is given to us by the staff of the Chief Mining Engineer.

We do not get many complaints from the Chief Engineers of the Company's service about the quality of the Indian coal supplied to them. We have never yet had a complaint that the quality of the Indian coal supplied has prevented a mail steamer from running up to the contract time.

(3) **Special supervision to avoid breakage in loading.**—(To Mr. Legge.)—We load by basket at Garden Reach and have no mechanical appliances. There is hardly space there to instal such plant and we have never felt any need for it. As it is, we can load 2,500 tons in 24 hours loading day and night. At present we are doing about 2,000 tons; the day before yesterday we loaded 2,300 tons, into one vessel.

(To Mr. Banerjee.)—Dishegarh and all high grade coals from the lower fields are very friable. The absence of small coal depends very largely on loading. We rely on careful loading at the collieries for avoiding dust and smalls in the coal at the time of shipment. If we are particular to see that the loading at the colliery is done properly and if we have it inspected, we find at Calcutta that the coal does not contain much dust or slack. Coal does not disintegrate much after leaving the colliery on the journey down to Calcutta, or while it is being loaded in Calcutta, if care has been exercised in good loading on the colliery. If we wished to be *very particular* about a special consignment I agree that we could get better cargo results by picking from stacks and so avoiding all small coal and dust.

(To Mr. Legge.)—As regards the complaints that coal breaks when it is dropped from a height into the ships' hold I agree that certain breakage occurs at first when coal is dropped from a great height. But the coal loaded subsequently is not much affected. For example, if you can load say 1,000 tons of coal into each hold of a ship at the coal-dock by the Becket plant then the coal loaded by basket work afterwards is protected from breakage by the coal already in the holds. You will find that though at first the coal may break up slightly there is no great percentage of breakage in the whole cargo.

**Dr. D. B. MEEK, M.A., D. Sc. (Glasgow), O.B.E., Director of
Industries, Bengal and Chairman of the Coal
Transportation Committee.**

WRITTEN STATEMENT.

These replies are in addition to those given by the Coal Transportation Officer whose replies were drawn up in consultation with me.

A. Possibility of economies on the coalfields.

1. **Reduction in cost at pit-head.**—In my opinion the trouble which arises from pit-head cost results mainly from (1) the lack of organisation within the industry, (2) the inefficient methods of working in some concerns.

(1) In other countries where the industry is organised, employers do not yield to demands for higher wages unless they are in a position to meet such higher wages from their profits. I express no opinion here whether the wages are too high or too low. If after organisation of the industry the wages demanded were higher than the industry could bear, there might be a case for special State assistance, provided the State considered the existence of the industry to be of national importance. If the industry as a whole elects to remain unorganised and if the wages are higher than a section of the industry can bear, there does not appear to be any case for special assistance especially if the section concerned does not make an effort to adopt efficient methods of working. As regards the increases in miners' wages in recent years, the generally accepted opinion is that these increases have brought about even greater percentage increases on output cost resulting from the fact that the miner does not occupy the increased leisure time which he now takes in a healthy manner. I realise that organisation within the coal industry in India is very difficult but so long as such organisation is opposed, it seems to indicate that there is profit in the industry for those concerns at least who adopt efficient methods of working.

B. Possibility of economies in transport to Calcutta.

6. (a) **Improvements in wagon supply.**—See Coal Transportation Officer's reply.

In addition to the irregular quality of Bengal coal supplied to foreign markets, its varying condition is one of the main objections from the point of view of the consumer at these places. To remove this objection means screening or hand selection and practically the supply of open low-sided wagons and loading, as far as possible, direct into these wagons without previous dumping in heaps. This dumping means not only additional expense in handling but also reduction in condition every time the coal is handled. I realise that direct loading brings us back to the question of the supply of wagons, which at present is far from adequate for the purpose. Moreover, coal traffic being "peak" traffic, we can hardly expect that the railways will ever be willing to supply a sufficiency of wagons to carry all the traffic offering at all times of the year. It has been the policy of the Coal Transportation Officer's Advisory Committee to try to reduce the amplitude of the seasonal variations of demand for coal wagons by encouraging the building up of coal stocks during periods of wagon plenty by those concerns which were in a position to do so.

Type of wagons.—See Coal Transportation Officer's answer.

Only open wagons should be used for the coal export traffic and the trains should be run much faster than at present from the coalfields to Calcutta. I see no reason why such trains should not be run to special timings averaging about 18 miles per hour. Such fast running would also reduce pilferage and could even now give a better supply of wagons.

8. **Railway freight.**—See Coal Transportation Officer's answer.

I have not figures on which to base any conclusion regarding the freight charges from coalfields to the Calcutta docks but whatever the figures may be and whatever the method of costing, the time variable must enter into the function, and if the rate at which coal trains are run to the docks is increased to 18 miles per hour the cost of running to the railways per ton mile must be reduced, considering that the speed suggested is, I believe, in the neighbourhood of the optimum for Loco. coal consumption.

9. **Work of Coal Transportation Officer.**—See Coal Transportation Officer's answer.

So long as wagons are not freely and immediately available for any and every case of the transport of coal, be it for export or other purposes, there must be a rationing of coal wagons. This is the main reason for the existence of the Coal Transportation Officer and his Advisory Committee. The rationing cannot be left to the railways. Decisions must be made which give preference. These decisions are made to the Coal Transportation Officer by an Advisory Committee which is representative of the coal producers and

the coal consumers with an independent Chairman. While coal wagons remain short any increase in the export trade of coal would only increase the necessity for the existence of an independent body with power to make decisions giving preference in one direction or another. It is even quite possible to imagine conditions in which the deciding body might be necessary not in order to assist in the export of coal but to refuse assistance if such export were to the detriment of more important interests to India. In fact this very question has come before the Advisory Committee in the past. So long as preferential treatment, either for export or otherwise, is necessary there must be a deciding authority other than the railways. In this connection I would invite a careful perusal of the following extracts* from the Coal Transportation Officer's letter No. 108-3-J of the 10th March 1923 and from the Records of the 9th and 19th meetings of his Advisory Committee.

Extract from the Record of the proceedings of the ninth meeting of the Advisory Committee held in the office of the Coal Transportation Officer, Calcutta, on the 13th October 1923.

* * * * *

"In regard to the position on the Bengal-Nagpur Railway letters were produced from several concerns, many of whom were included in the list of 'Special Supplies,' complaining of the difficulties they had had in obtaining regular supplies from collieries served by that railway. Mr. Hawkins said the position had been discussed on the previous day with the Superintendent of Transportation of the Bengal-Nagpur Railway who explained the difficulty was due largely to a series of accidents which had occurred on different routes resulting in the flow of empties to the Bengal-Nagpur Railway coal districts from several directions being either entirely stemmed or severely restricted. The Superintendent of Transportation also explained that a factor in the situation had been the issue of instructions by him to the District Office to hand over all the empties possible to the East Indian Railway by way of reducing the heavy balance of wagons due to that railway. This necessarily resulted in a considerable reduction in the number of empties available for supply to collieries served by the Bengal-Nagpur Railway.

"Mr. Terry suggested that such action should only be taken after consulting and obtaining the consent of the Coal Transportation Officer. Whatever may have been the value of the Bengal-Nagpur Railway's action as a measure of general administration, it left out of all reckoning the claims of the coal traffic and contributed in no small degree to certain industries in the United Provinces, and the Punjab being thrown entirely out of their stride. Had the Coal Transportation Officer been consulted he would certainly have suggested that the time was most inopportune for such a drastic measure. This was what Mr. Pelly had in mind when expressing the opinion in his demi-official of the 10th March 1923 to the Chief Commissioner of Railways that it would be inadvisable for the Coal Transportation Officer to be appointed as a joint officer of the two coal carrying railways instead of continuing to be an officer directly responsible to the Government of India. The relevant passage of the demi-official reads as under:—

"To subordinate the controlling authority to the two coal carrying railways would create an undesirable position as there would be a conflict of interests which the authority would not be able to adjust owing to his dual obligation⁸ and there would be danger of his subordinating to the interests of the two railways, the interests of industries to protect which should be his first and chief duty."

"Mr. Hawkins stated incidentally that he was being flooded with telegrams and letters appealing for assistance under the 'Emergency' clause.

* The last paragraph of the extract from that letter is printed as an annexure to the written statement of the Coal Transportation Officer, *vide* p. 66.

He mentioned, however, that the Superintendent of Transportation had rescinded his orders regarding the excessive handing over of empties to the East Indian Railway and that an improvement in the situation on the Bengal-Nagpur Railway could be looked for in the course of a few days."

* * * * *

Extract (paragraph 15) from the Record of the proceedings of the 19th meeting of the Advisory Committee held in the office of the Coal Transportation Officer, Calcutta, on the 13th May 1924.

"15. *Coal export and conservation of coal supplies in the country.*—Mr. Panton enquired whether coal shippers could look for special assistance on the part of the Coal Transportation Officer to prevent vessels coming on demurrage and also to stimulate exports. It was pointed out that shipment coal invariably came down in rakes and half rakes and so conduced to a high standard of transportation being maintained. Dr. Meek expressed the opinion that while, as a general principle, it was desirable to shift coal as much as possible, it might happen that large despatches of coal on shipment account might be of benefit solely from a colliery's point of view. He considered that the Coal Transportation Officer should hold the balance as between the colliery and the consumer, with additional sympathy on the side of the consumer. A point which he considered should be borne in mind was that the country had the first call on the available supplies of coal and that exports should not be stimulated to such an extent as to react unduly on the supplies available for indigenous industries. The meeting agreed in the views expressed by Dr. Meek. Mr. Band mentioned that these views were generally held at the time that the embargo was placed on coal export in 1920."

* * * * *

C. Possibility of economies at the docks and coal depôts.

13. **Storage and stacking at docks.**—See Coal Transportation Officer's answer.

In addition to that answer I consider that there should be emergency stacking space for about 6,000 tons, in case the timings of coal trains and the berthing of ships did not on certain occasions coincide; and if such lack of coincidence in timings was due to the railways or the Port Commissioners there should be no stacking charges. This is simply for emergency stacking.

E. Comparative merits and prices of Indian and other coals.

21. **How competition can be met.**—By the supply of coal of definite quality and definite "condition." The price is not the only thing. Given offers of coal of equal prices or almost equal prices, the consumer will always accept the offer from the source which he can rely on as to quality and "condition," and this even if the price is somewhat higher. Some other countries in order to obtain a good reputation for their articles have had to prohibit the export of these articles if not up to standard. India seems to be in that position now so far as coal is concerned. If the industry were organised and responsible the members would see to it themselves that only coal up to quality and condition was exported. But as things are at present and are likely to be for some time to come, it would appear that some measures must be taken to keep the quality and condition of export coal up to standard in order to raise the present reputation of Indian coal at former export markets. I shall return to this later.

F. Grading, inspection and certification of coal.

24. **Grading of coal.**—See Coal Transportation Officer's answer.

I am in favour of grading coal for export—

- (a) as to quality,
- (b) as to condition,

and for bunkering as to quality alone. The dumping would affect the condition and any certificate given as to condition at one date would not necessarily be applicable later.

25. Classification into grades.—The body suggested later would take up the question of the classification of coals after sampling and determination of the fuel value of the various coals by such methods as they considered satisfactory.

26. Measures to effect grading.—Grading might be brought about by the establishment of an authority called the Coal Board or the Coal Committee or known by any other suitable name, with an efficient staff for inspection, analysis, determination of fuel values on running tests if necessary, certification, etc., (see later remarks on the functions of this body).

27. Control of grading and 28. Inspection and certification.—My opinion regarding external interference in the working of any industry is that it is only justified in exceptional circumstances. But in this particular case the conditions at present are exceptional. (1) There are not sufficient wagons to “go round” at all times of the year, (2) Indian coal has not the reputation which is its due in export markets, (3) Some of the largest consumers are developing their own collieries and in the near future will most probably reduce their purchases from the existing collieries.

(1) I have already expressed my views on the necessity for a continuation of the system of control of coal wagons so long as the number of wagons available for this trade is not sufficient to meet the demands for transport of coal. I have also stated that this control should cover the wagons for the Chief Mining Engineer's requirements and the home railways. My views have been expressed in my letter No. 14874-D. L., dated 17th March 1923, to the Government of India, with a copy of which, I understand, the Coal Transportation Officer has already furnished the Committee.

(2) The next point is the reputation which Bengal coal has in export markets and also in India. To enhance this I am of opinion that there must be a grading and certifying authority. In order to be in a position to grant a certificate, such an authority must have an adequate staff for sampling, testing and inspecting at the time of loading. Without this efficient staff no sensible officer would take the responsibility of granting certificates. I should be very much surprised if the consumer were unwilling to pay the small fee necessary to cover the cost of such a certificate to ensure that he receives what he had bought. For consignments to places within India I would make this certification *voluntary*, but for export consignment, in the interest of the coal trade, I consider that certification as to the quality asked for by the consumer should be *compulsory*. Any indirect method of ensuring that quality was up to the standard sold, e.g., by giving preference in coal wagon supply to certified coal, would only lead to accusations of unfair treatment of certain producers by the officers allotting wagons. The coal authority which I shall propose shortly should also have the power to prohibit the export of coal which they consider is *especially liable to spontaneous combustion*.

(3) At present Government is one of the largest purchasers of coal and these purchases are made through the Chief Mining Engineer to the Railway Board. I have heard the opinion expressed that all this inspection work indicated above should be done by the executive of the Chief Mining Engineer's Department. The fundamental principle in all store purchase on behalf of a third party is that the inspection department and the purchasing department should be *entirely separated*. This is a principle which I must emphasise most strongly. Experience has proved that any departure from this principle is fraught with the greatest of evil possibilities. My own opinion is that the purchases for Government should be made by the Chief Mining Engineer's Department, but that all inspection, including the inspection of such purchases, should be carried out by a *separate inspection department*.

In conclusion, so far as this portion of my answers is concerned, I would propose the formation of a “Coal Authority” under a responsible head

working with the advice of an Advisory Committee, of which he should be Chairman, and which would be constituted as follows:—

1. Independent Chairman (Official head of " Authority ").
2. Representative of East Indian Railway.
3. Representative of Bengal-Nagpur Railway.
4. Representative of Port Commissioners.
5. Representative of Bengal Chamber of Commerce.
6. Representative of Bengal National Chamber of Commerce.
7. Representative of Indian Mining Association.
8. Representative of Indian Mining Federation :

having the following executive departments under it:—

- (1) Transportation Department.
- (2) Government Coal Purchase Department.
- (3) Inspecting and Certifying Department.

These departments would carry out the functions I have indicated above, viz. :—

- (1) Allotment of all wagons for the transport of coal.
- (2) Purchase of coal for the railways and Government Departments.
- (3) The sampling, testing, grading, inspection and certification (a) of such Railway and Government purchases, (b) of consignments to private consumers in India where the producers are willing to pay for the work, (c) of all consignments for export.

The coal authority would receive instructions from the Government of India regarding the question of minimum stocks which the Railways should have in hand; but apart from these minimum instructions the authority would decide the policy of building up stocks for the railways and other large consumers during periods of wagon plenty, and reducing these stocks during periods of wagons shortage. They would also employ the necessary paid staff required in the large industrial centres to certify the necessity of coal supplies at these centres at various times. The Railway representatives are suggested as members of the Advisory Committee for various reasons (1) to obtain co-ordination between the work of authorisation and allotment and of transport, in order to avoid, if possible, the blocking of any particular routes, and (2) to advise as to areas from which railway coal purchases should be made.

29. Compulsory versus voluntary grading.—Government should take such powers as are necessary to enable the Coal Committee proposed above to carry out the functions suggested.

30. Meeting of cost of grading and inspection.—The cost of the staff required to carry out these functions can be met by charging a small fee per wagon allotted, and an additional fee for wagons for those consignments which require a certificate. The consumers will have to meet this extra charge finally, but I am sure they would willingly do so.

31. Sale on analysis.—It would be possible, but I do not consider it would meet the consumer's requirements. The calorific value is only one factor, although of course a very important one, and the consumer wants to know something more about a coal than its calorific value.

G. Pooling of Coal.

32. Practicability of pooling and its effects.—Pooling could only be possible with organisation within the industry. Two or more firms may at any time agree to help each other by pooling. That is only one of the first signs of organisation. I do not consider general pooling as a practical proposition at present.

Dr. D. B. MEEK, Director of Industries, Bengal.

(Oral Evidence—the 27th January 1925.)

General.—I have been Chairman of the Coal Transportation Committee since the end of 1922. I have no actual experience of the working of the coalfields in India.

B. Possibility of economies in transport to Calcutta.

6. (a) **Improvements in wagon-supply.**—(To Mr. Banerjee.)—It is correct to say that the Advisory Committee recommended seasonal freights for coal on railways.—I can send references made in our minutes to this subject if the President wants them.

In this connection I put in some graphs which may be of interest to the Committee, as well as a note explaining them and drawing certain deductions from them.

7. **Type of wagons.**—My opinion is that the uniform speed on which the East Indian Railway lay stress in their written reply should be greater than it is at present. I believe that one of the difficulties in faster running is the braking power of the train: one obstacle to having coal-wagons fitted with vacuum brakes is I believe that the fittings are lost when wagons go into the collieries. Another difficulty about running the trains faster is said to be the strength of the bridges. (To Mr. Stuart Williams.)—I certainly favour definite preference being given to trains carrying export coal over trains carrying ordinary coal. If increased siding accommodation were provided *en route* some trains could be run faster than others. I agree that the position has been distinctly better during these last twelve months and I attribute this to a great extent to the working of the Advisory Committee to the Coal Transportation Officer. As regards the possibility of abolishing the Coal Transportation Officer if there are further improvements, my attitude is that he will not be necessary when without the pressure brought to bear by the Advisory Committee to the Coal Transportation Officer as many wagons are available at all times as are wanted; and he can be abolished when that position is reached: but whether that will be in 12 months' time or in 5 years' I cannot estimate.

(To Mr. Banerjee.)—Fast running will reduce pilferage because a train running at an average speed of one mile per hour spends more time stationary in yards and sidings than one which has an average speed of 18 miles an hour, and so there are fewer opportunities for pilferage from it. Fast running will certainly reduce the number of stops at junctions and elsewhere.

9. **Work of Coal Transportation Officer.**—I agree that the Coal Transportation Officer is the symptom of a disease, but so long as the disease continues preference must be given and some authority other than the railways is necessary to decide who shall have the preference.

(To Mr. Bray.)—I do not think that wagons should be distributed to collieries according to their raisings. I think that distribution should be according to the requirements of the consumer and to the purchases of the consumer. Distribution according to raisings is still "control" only "control" by the coal trade instead of by an independent authority. I do not say that the consumer does not try to use the control for his own ends, *e.g.*, the railways benefit at the expense of the coal trade by being independent of the general wagon control. The wagons should be used to carry what the consumer wants and not what the coal trade forces upon him. (To Mr. Legge.) I do not say that the Coal Transportation Officer will always be necessary, but I say that some independent deciding authority is at present necessary. It is true that before the war there was none, but that does not prove that it was not necessary to have one. To the statement that no complaints were raised, I can only say that I have heard different opinions expressed and in any case the conditions were not similar.

(To Mr. Banerjee.)—I say that if the collieries were given wagons in accordance with their raisings they might supply a coal that was not wanted by the consumer. I suppose that there is a demand of some sort for every kind of coal, but the demand for each class of coal is not proportional to the raisings in that class. The consumer buys the coal and should get what he wants. The present system is that wagons are supplied to meet as far as possible contract between consumers and producers. I do not think that this tends to reduce the price of coal. Small consumers as well as big consumers get wagons: the Advisory Committee exists for the very purpose of seeing that preference is given equitably and that the big men do not get more wagons than their share. I object most strongly to Mr. Banerjee's suggestion that large industries are favoured. It is an Advisory Committee and not an executive committee, but I do not remember any case in which the Coal Transportation Officer has not followed the advice of the Committee. Everything that he has done has been either on the Committee's initiative or with their subsequent approval. The Committee lays down the general principles which the Coal Transportation Officer follows: sometimes he does the work first and puts up the case for sanction afterwards. This is perfectly in agreement with standing orders and it is what he is there for. It may be true that the Indian Mining Federation member has not always agreed with the rest of the committee, when they have approved the action taken by the Coal Transportation Officer: we do our best to persuade that member and we give him every opportunity of persuading us: if neither he nor we have any success in this, there is no help for it and we have to go on what the majority thinks best. It is not the business of the Advisory Committee to supervise the detailed work of the Coal Transportation Officer's office. It is their business to lay down the principles on which the distribution of the wagons should be carried out: when wagons are scarce it is their business to allot wagons preferentially and it has never been shown that individual members of different branches of industry do not get similar treatment.

I put in a confidential statement showing the total sanctions during 1923-24 on account of shipment and bunkering.

C. Possibility of economies at the docks and coal depôts.

13. Storage and stacking at docks.—(To Mr. Stuart Williams.)—I mean six thousand tons for each berth.

F. Grading, inspection and certification of coal.

I agree that my scheme is an elaborate one, but by this time the Committee has obtained more knowledge about all these things than any one else has and they are not likely to obtain much further assistance except from some fairly full scheme.

I have not worked out in detail what the cost will be. Certainly the up-country certifying officers will have to be paid. It is one of our difficulties that we have had to rely on people who are not getting any remuneration and who are doing the work as an extra: and we feel that sometimes their recommendations are not well founded.

Of course there might be difficulty about the consumer paying the extra cost necessary, if he can get South African coal of good graded quality more cheaply: but the cost would not be very much more and my scheme chiefly contemplates the up-country consumer and not only the consumer of export coal. There is also the possibility that it might be feasible to reduce railway freights to some of the places concerned.

24. Grading of coal.—By grading "as to condition" I mean sizing and cleaning.

26. Measures to effect grading.—It would take some time to get the scheme going, I agree. It would require legislation but that would be

necessary in any case if we do anything much: for example, it certification of export coal is made compulsory. But there is not very much that is new in this scheme which I am proposing: it aims at co-ordinating existing work, though it would increase the size of the Advisory Committee, which so far as I can see would work in three sub-committees. I agree that some measures must be taken quickly to get back our overseas markets, but I do not see why this scheme of mine would involve the hostility of vested interests. It is true that it would conflict with the reluctance of a section of the coal trade to be controlled, but I do not see how we can get back our export markets unless they get a better name for their coals and that will take a long time to work up even if we started at once.

The suggestion that we might avoid making certification compulsory by allowing rebate only to certified coals would meet with the difficulty that some people always consider that their coal is good enough. I think that there must be some Government authority: I do not see how a non-Government authority without legal powers can state that any particular coal is not good enough to get the rebate for export. In my opinion the Chief Mining Engineer with a Board behind him should purchase or inspect but not both and wagons for railway coal should come under the general control. I only wish to lay down the broad lines of the scheme and in particular that the buying and inspection should be separate.

(*To Mr. Stuart Williams.*)—It is difficult to say whether the inspection of export coal should be done at the docks or at the collieries for the simple reason that the docks is the best place to see the coal before it finally leaves India, while the colliery is the best place to see the coal as it comes from the seams. This latter point is particularly important when a colliery is working several seams: inspection at the colliery would be the easiest way of preventing the mixing or substitution of coal from an inferior seam. But even if inspection were confined to the docks this sort of thing might be checked, granted sufficient staff for sampling and analysis: this, however, would militate against quick loading and in particular mechanical loading. Personally I favour inspection at the collieries.

(*To Mr. Banerjee.*)—It is possible to see all the wagons at the collieries for the docks, but I do not know that it would be a paying business. The question whether we should keep an inspector at each colliery is a matter of detail. If the colliery was one of which the coal was uniform and if it was on the grading list and working one seam only, inspection in detail would not be needed. As regards Mr. Banerjee's suggestion that analysis would not be practicable at the docks I am not referring to a scientific analysis which aims at getting down to molecules, but to one which would be much more practical and elastic. Even if the colliery exporting the coal were working a seam of which the top and bottom sections were of different qualities, you could, if you liked, make sure of getting coal of a certain analysis and quality in a particular shipment, but the point would be reached at which it would not pay to see everything loaded. A certain amount of inspection of loading is possible: the exact amount necessary is a matter that will vary. I would compare it with the inspection of food and medicine: you trust the producers of these to a certain extent and you do not inspect every single tablet of quinine or piece of food that is produced. Mr. Banerjee may be of opinion that the consumers would not be satisfied by such a system, but I can assure him that the consumers would be much better satisfied with that system than with what they have to put up with now-a-days.

N. J. MEHTA, Esq., Late Agent, Basra Coal Company.

A. Possibility of economies on the coalfields.

1. **Reduction in cost at Pit-head.**—Costs can be reduced by reducing the cost of tramming and carting, by extending siding places near enough to the

pit and incline mouths. This would probably save at least four annas a ton and by revising the rates of wages and reducing the scale of Government and local taxes and cesses which are according to me too high and too arbitrary..

2 **Effect of recent increase in wages.**—The recent increases in wages have effected the cost of producing to the extent of 60 per cent. to 75 per cent.

3. **Effect of legislation.**—Although it is difficult to give even any approximate idea as to the extent of cost by recent or proposed legislation unless it comes into force, it can, however, be said that the cost will certainly be increased by more than 50 per cent.

4. **Possible savings in stacking charges.**—If the coal is despatched as raised instead of first going into the stock the saving may come to between 8 annas to 10 annas a ton.

5. **Wastage from stacking.**—According to my opinion the wastage accrued from the coal stacked comes to approximately 10 per cent. and this can be more if the stacked coal remains unremoved for a good deal of time.

B. Possibility of economies in Transport to Calcutta.

6. (a) **Improvements in wagon-supply.**—The present system of distributing to, loading at and being despatched from the collieries is by all means defective. So far as distribution is concerned the system gives an undue preference to Loco. at the cost of all other industries. As a rule, Loco. supplies are being continued for months and months together even though many of the Loco. Sheds might have been over congested with coal. According to my opinion, there ought to be a particular fraction set apart for Loco. and the rest should be distributed to meet requirements of other industries which might be suffering from want of coal. The present loading system too is defective. Wagons have to be detained for 10 and 20 hours on the collieries. This causes a great delay in the way of quick transit, resulting many a time in shortage of wagons when the railways have to carry other traffic. It has been my experience under such conditions, collieries have to remain without any supplies for days together. This defect can to a certain extent be remedied by collieries having self-loading plants inclusive of screens. This is impracticable in the case of collieries owned by Indians as they are always in want of good finance and steady market for their coal. The despatching arrangements available at present are also defective because wagons drawn from the sidings have to be carried to the weigh-bridge for weightment purposes. The marshalling yards being too small to accommodate a large number of wagons these have to be detained or stabled in some sidings for days together before they are despatched. The quick transit is thus disturbed, the loaded wagons take unreasonably long time to return to their destination and thus shortage of wagons is always brought about.

(b) **Their influence on costs.**—If the improvement suggested above can be carried out, I believe there may be a saving of annas 8 to annas 12 a ton and the cost for export and bunker coal should be reduced to that extent.

7. **Type of wagons.**—Most of the present type of wagons cause a certain quantity of slack and dust during the process of loading and unloading. If the wagons of hopper type with a contrivance to unload by themselves are constructed for export and bunker coal certainly there will be less quantity of slack and dust which is the general cry against Indian coal for export and bunkering.

8. **Railway freight.**—The present level of railway freight between the coal-fields and the dock is certainly high when one finds that the steamer freight for the distance of 1,500 miles is only Rs. 6 a ton, while the railway freight for the distance of 175 miles which is the distance between the Jharia coalfield and the dock is Rs. 4.12 a ton. According to me, this ought to be reduced and the reasonable freight may be said to be Rs. 2.8 a ton from Jharia and Rs. 2 from Raniganj.

9. **Work of Coal Transportation Officer.**—Before the creation of the Coal Transportation Department the export and bunker coal was given preference so far as wagon supply for such coal was concerned. When the railways were short of wagons, rakes were given and practically the export

or the bunker coal had never to wait for the shortage of wagons. The public cry is that practically the Coal Transportation Officer has not made any improvement and he is not expected to make any in future, so if the post is safely dispensed with it will not cause any inconvenience to any branch of the coal trade.

D. Steamer Freights.

17. Steamer freights.—The present level of steamer freights for the ports where Indian coal is being exported is undoubtedly high in comparison with the same from other parts of the world such as from African ports, from the ports of the United Kingdom and from Japan ports.

E. Comparative merits and prices of Indian and other Coals.

18. Comparative merits.—Yes, I have experience of Cardiff coal, South African coal, Natal coal, East Portuguese African coal and Japan coal. In comparison to Indian coals, only Cardiff coal may be said to be somewhat superior in quality to Dishergarh; as regards all others, some of them are equal to Jharia First Class and some to Jharia Good Second Class and some to Jharia Second and Third Class. They find ready market only because before being loaded and shipped for export they are carefully screened whereas such precautions are not taken for Indian coal, it is not preferred for export and bunker purposes.

19. C.i.f. prices of Indian coal at different ports.—Assuming Rs. 8 as the pit-head price of coal the present c.i.f. prices at Madras, Colombo, Bombay, Karachi, Rangoon, and Singapur will be approximately Rs. 21, Rs. 22, Rs. 22, Rs. 22, Rs. 20, and Rs. 21 respectively.

20. Prices.—At some of these ports, African coal is being sold for Rs. 24 to Rs. 26 a ton whereas Indian coal though offered at the same rate and sometimes even with a less rate than that is not being preferred for export and bunker purposes.

21. How competition can be met.—By reducing railway and steamer freights, by giving substantial rebates or some reasonable bounty to Indian coal so as to make it available with rates cheaper than the coal of other countries.

22. Possibility of new overseas markets.—I do not think any new markets overseas are likely to be available for Indian coal as all other countries with the cheap railway facilities such as special bounties State-aid, etc., are likely to dump them with their own coal.

23. Special assistance to other coals competing with Indian.—The African coal has been facilitated by the grant of special concessions and so it can successfully compete with the Indian coal and has been successful to drive it away even from Indian markets.

F. Grading, inspection certification of Coal.

24. Grading of coal.—This can be done provided market for Indian coal is made available for the export and bunkering.

25. Classification into grades.—Indian coals can be classified according to seams where seam numbers are given.

26. Measures to effect grading.—First a thoroughly representative committee of producers, consumers and shippers should be called and an unanimous agreement be obtained for the purchase of Indian coal if graded for export purposes.

27. Control of grading.—The grading system should be controlled by a Grading Board with a non-official Chairman.

28. (a) Inspection and certification.—I am in favour of this.

(b) Agency for this purpose.—By creating a Department under the supervision of the Chief Inspector of Mines.

29. Compulsory versus voluntary grading.—I am not in favour of compulsory grading.

30. **Meeting of cost of grading and inspection.**—By imposing a little tax on despatches intended for export and bunker.

31. **Sale on analysis.**—This could be done.

G. Pooling of Coal.

32. **Practicability of pooling, and its effects.**—The pooling of coal both for export and bunkering can be practicable if the same class of coal is being loaded by the combining collieries having their sidings nearer to each other so that all the wagons intended for the above stated purposes can be seen despatched thus obviating delays either to ships or to wagons.

33. **Effects of improved facilities on pooling.**—I should not be in favour of pooling if improved wagon supply and improved facilities at the docks and coal depôts are provided.

34. **Compulsory versus Voluntary grading.**—I am against any compulsory system.

CHHAGAN LAL PAREKH, Esq., of Messrs. Gangji Dossa and Sons, Colliery Proprietors, Jharia.

A. Possibilities of economies on the coalfields.

1. **Reduction in cost at pit-head.**—There is only a small possibility of reducing the cost of coal at the pit-head and that is by reducing the present wages of the miners, but this will not be feasible without disturbing, for some time, the present peaceful working and it is unlikely that the trade will be prepared to face such a disturbance. There are collieries which have got loading accommodation at a distance of about two miles away from the collieries and these have therefore to pay a cartage of about rupees one to two per ton, besides the heavy loss of coal in transit from the colliery to the siding; if the loading accommodations are extended up to the collieries so as to do away with the cartage or to reduce the same to the minimum, it will mean a great saving in the cost of coal into wagons. There are many collieries which have suffered much on this account, so much so that many of them have been entirely ruined. Some of them are already closed, whereas others have been heavily indebted to money-lenders.

To bring these collieries to a little healthier condition is the duty of the authorities and this matter therefore is important in the interest of the coal industry.

2. **Effect of recent increase in wages.**—The recent increase in the wages has added to the cost of production by about four annas per ton but this is very insignificant when compared with the taxes and other incidental charges with which the industry has been saddled.

4. **Possible savings in stacking charges.**—A clear charge of four annas per ton would be saved if the coal is despatched as it is raised instead of being stocked indefinitely long and thereby allowed to be subjected to weather conditions and the consequent loss in its value.

5. **Wastage from stacking.**—My own experience is that the usual wastage in the stocks is five per cent. minimum but I have seen instances in which ten per cent. wastage has also been noticed.

B. Possibility of economies in transport to Calcutta.

8. **Railway freight.**—My opinion is, the lower the railway freight, the greater the encouragement for shippers to export coal *via* the sea route.

9. **Work of Coal Transportation Officer.**—The work of the Coal Transportation Officer, I must admit, was very satisfactory on the whole. He had no

doubt laboured very much last year to satisfy the colliery concern consumers and middlemen and by authorizing heavy sanctions, he kept the coal market firm. No doubt there was a grievance for the smaller collieries and numbers of complaints all around came out from the colliery owners holding small collieries that the system worked by the Coal Transportation Officer was only in the interest of larger concerns at the cost of the smaller ones. He tried to give Public Supply two days in a week for the smaller collieries and thereby the smaller collieries in fact got the enhanced rate. However, the better scheme which should be sanctioned by the Government is one whereby the smaller collieries may not suffer for the larger collieries but they may get a reasonable and regular wagon supply of wagons with a minimum of two wagons per day for the smallest colliery in the field and if the Coal Transportation Officer works accordingly, his appointment will be justified in the interest of the industry.

I am strongly of opinion that the market stood firm because the Coal Transportation Officer worked satisfactorily. No doubt as indicated above, modification is necessary in the scheme for the interest of the smaller concerns but the office of the Coal Transportation Officer must be retained.

D. Steamer Freight.

17. Steamer freights.—In old days the steamer freight to Madras was something near to Rs. 2.8 to Rs. 3 per ton and that for Bombay and Karachi Rs. 3.8 to Rs. 4.8 per ton. It was at that time that the best Bengal coal was quoted in the Bombay market c.i.f. at Rs. 12 per ton and the ruling price of coal in Bombay was at that time based upon 130 as compared with Cardiff coal. The position at present is very much altered and the present rate of freight needs therefore no further explanation as to its being much too high.

E. Comparative merits and prices of Indian and other coals.

18. Comparative merits.—As stated above, in the old days if the price of Cardiff coal was c.i.f. Rs. 18 per ton, then the price of the best Bengal coal should be Rs. 12 and the buyers had to choose between the two qualities what to purchase. Any reduction in the price of Cardiff coal used to make the Bengal coal comparatively cheaper. This was what I had myself experienced in Bombay while working for a large European House interested in the import of both foreign and Indian coals.

21. How competition can be met.—The only remedy to allow Indian coal to compete with the foreign coal at the Indian ports is to levy a countervailing duty on the foreign coal and more particularly upon the subsidised Natal coal, the competition by which coal is unfair in every respect.

23. Special assistance to other coals competing with Indian.—It is the Natal coal that has been receiving special concessions at the hands of its Government and the extent of such concession is already in the hands of our Government and as several protests have been raised against this, no further mention of same at this stage is necessary than that the Committee should refer to the record of protests made by the Indian Mining Federation and the recommendation of the Legislature in the Legislative Assembly proposing a countervailing duty on this particular coal equal to the amount of the subsidy which it has been receiving at the hands of its Government.

F. Grading, inspection and certification of coal.

24. Grading of coal.—In my opinion, without facilities, no grading of coal will be possible, but if facilities at the depôts are provided by Railways, the grading of coal should be left entirely to the collieries, without any interference of the Government. The trade should itself settle the grade of its particular coal for the buyers to come forward to purchase it. No interference by the Government will be viewed with any favour by the trade and more particularly by the Indian Section.

G. Pooling of coal.

This is a matter impossible and if put into practice will create too many complications to be overcome.

General.

In conclusion, I would say that the questionnaire have very much ignored the most important matter namely that of the inland trade. The above questions wholly relate to the export of coal but they do not at all touch the inland trade. Prepayment of railway freight is also not to a small degree responsible for the downfall of the coal industry. It has created upon the industry a great financial stress and as this was also a war measure, it should be withdrawn and replaced by the Freight-to-pay System. It is only the concerns, who feel the pinch who would be able to understand the stress of the freight-prepaid system and as such, the protests hitherto made have not appealed to the authorities. The longer the system continues, the greater will be the hardship upon the colliery owners, and this, to a great extent, will hamper the prosperity of the Industries.

Further the recent increase of the railway freight by about 30 per cent. has also done a great harm to the coal industry. There was a time when the railway freight to Bombay was Rs. 11 per ton and now it is about Rs. 16 per ton. This abnormal increase in the railway freight has encouraged the subsidised Natal coal to get a firm hold in the Bombay market so much so as to oust out the Bengal coal from one of its largest markets in India.

The railway freight should therefore be reduced for all stations in India and more particularly for the ports at which the Indian coal has to fight with the foreign coal.

The Government and the Indian Railways should give preference to Indian coal and not purchase foreign coal and more particularly the subsidised coal, as such purchases more often than not encourage unfair competition against the Indian coal.

Considering the position of taxes upon the coal industry, it will appear that these are too heavy to be borne in normal times much less in bad times and they should therefore be investigated into, and reduced to the minimum and on a basis, which the trade could bear even in bad times.

E. H. PASCOE, Esq., M.A., D.Sc., F.G.S., Director, Geological Survey of India.

Extract from letter No. 632/1177, dated 7th February, 1925.

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2. My opinion is asked on the possibility of selling coal on a guarantee of quality and calorific value as determined by analysis. So far as I can make out, the question revolves round the comparative merits of three possible schemes, which I propose to define in order to make my remarks intelligible.

1. *Grading scheme without guarantee.*—According to one scheme, coal seams or collieries or both might be grouped into definite grades according to the average value of the coal produced. Under such a scheme, continued and multitudinous analyses of detailed consignments would not be made. A certain seam or colliery, or a certain seam in a certain colliery, having once been assigned to a certain grade, no further analyses would be necessary beyond periodic checks either at the mine, colliery, dock or unloading station, to ensure that the coal in question preserves its right to be included in its particular grade.

II. Specific analyses scheme.—Under one alternative scheme, the sale of coal is not only to be regulated by analysis, but its price is to be a variable factor directly dependent upon the analysis of detailed consignments. What is actually bought is not the coal itself but evaporative power or some other desired criterion.

III. Guarantee scheme.—There is a third method of procedure which could be combined to some extent with either Schemes I or II, and that is a guarantee scheme. According to this, coal sold is to be guaranteed to lie within certain limits regarding any or all of the factors of calorific value, ash, moisture, sulphur, fixed carbon, as may be specially agreed upon between the seller and the buyer. The seller has some latitude and the price is to some extent fixed, though bonuses and penalties are frequently arranged for.

Methods of purchase in the United Kingdom.—Until recently, coal was everywhere bought upon the reputation of the seam and the dealer. This is still the case in the generality of cases in the United Kingdom, where no guarantee is usually required. The buyer has a general knowledge of the class of coal he is purchasing, its characteristics being well known in the trade. If the buyer wishes to have definite analyses, calorific values and other characteristics of the coal, he either has them made or consults various books or periodicals giving analyses, such as those published by the "Colliery Guardian" and the "Business Statistics Company." From these he is able to ascertain in a general way the nature of the coal from any well-known seam, and colliery companies find it convenient to maintain a fairly uniform standard, especially for their more important customers. Hence, although there is no guarantee by the seller, the buyer assumes that the coal will conform to a certain standard, and consumers who are particular about their requirements see to it that the coal supplied conforms reasonably well with the standard assumed for that particular class of coal.

This applies even in the case of purchase of coal by the Admiralty. The characteristics of Admiralty coal as regards calorific value, moisture and ash are well known and very clearly defined; but no guarantee is given by the seller. Of course, sellers on the Admiralty list are no doubt too anxious to maintain their reputation to risk supplying to the Admiralty coal inferior to the standard stated for Admiralty coal.

The market does not always favour the buyer sufficiently to enable him to demand a guarantee, but the feeling in the United Kingdom now is that some safeguard is very desirable. One firm in the north of England stated recently that it had made an experiment in buying on the penalty and bonus basis, specifying certain limits of calorific value, moisture and ash, and declared that the results were highly satisfactory (Fuel Economy Review, December 1923, p. 16).

Method of purchase in the United States.—The United States Government realised the advantage of safeguards more than 15 years ago, and have bought coal under definite specifications ever since; they are no longer compelled to purchase only from dealers whose coal has acquired a reputation and can be trusted, but can, under the scheme now in force (which I shall describe later), take full advantage of competition and buy from the cheapest market.

According to D. J. Mekeel, the Chief Engineer of a Pittsburg firm, the practice of selling coal by guarantee has not yet obtained much hold on the industries of the United States of America apart from Power Companies, Municipalities and Government departments.

I. Grading scheme without guarantee.—A classificatory grading scheme would involve less change from present practice, and would be in the long run less expensive than the others. It would none the less necessitate considerable initial expenditure and time to grade the coal of 900 collieries, many of which work more than one seam. The chief difficulties in the universal adoption of such a scheme are, however, in my opinion two in number:

- (1) that of obtaining a really representative sample according to which the coal is to be graded; and
- (2) that of ensuring that consignments of coal shall be equivalent to these samples.

In many cases it is almost impossible to obtain in the ordinary way a really representative sample in the mine. In the Pench Valley, for instance, Mr. Hobson informs me that the roof and floor consist usually of black shale, and it is purely a matter of opinion to decide by inspection where the coal-seam passes into the floor or roof. In other cases, a seam is divided by a band of shale into an upper and lower portion, the two portions being of different qualities. During development, the lower portion alone, which, let us assume, is of good quality, may be taken out, and would represent the grade of the output during that period. When pillars are drawn, however, both portions of the seam will be extracted, including the shale band; the grade will then be affected, not only by the upper portion, which is often of poorer quality, but also by the shale band, which at the best will only be partially picked out unless a sorting plant be employed. Some of the shale is so carboniferous as to make it difficult to distinguish from poor-quality coal. In fact, as Mr. Hobson remarks, what may be called coal in a boom period will be discarded as shale during a slump. If such a seam were admitted to a classificatory scheme, it would be very difficult to prevent a consumer receiving an undue mixture of shale made either accidentally or deliberately. Such an adulteration would be most marked during periods of brisk demand, when collieries are straining to reach a maximum output and when a consumer is not in a position to complain for fear of his supply being curtailed or cut off. It would be extremely difficult to assign such coal seams to a definite grade, and they should, in my opinion, be left out of any classificatory grading scheme without guarantee which might be possible in other cases.

There are certain coal-seams and collieries in India which might lend themselves to a classificatory grading scheme, where the coal is required for the same purpose and to be used under the same conditions. Some seams are clearly defined and vary little in composition; there is, at any rate, no question as to what is coal and what is impurity. Even in the case of clearly-defined seams, however, shale and other impurities find their way into the coal. Even when applies to chosen clean seams, therefore, a classificatory grading scheme might fail to prevent accidental or deliberate adulteration. It is easy to check sampling, but difficult to check adherence to sample.

The comparative merits of a classificatory scheme and any other depend not only upon the cleanliness and constancy of the coal and the care with which the seam is worked, but also upon the purpose for which the fuel is required. Such a scheme can only be applied to coal used for the same purpose and under similar conditions. A first-grade coal might be useless for metallurgical purposes by reason of an excess of sulphur or lack of coking qualities. Coal with a high moisture or ash percentage can be used in a gas-producer when unsuitable for burning beneath a boiler. Even in the latter case, the furnace, and especially the grate, can be adapted to suit a particular size or quality of coal. Mr. Briggs has already pointed out that a short-flamed coal is more suitable than a long-flamed for boiler purposes, though both might belong to the same grade.

No doubt, the greater part of Indian coal is required for boiler purposes, so that it might, on the whole, be possible to grade some of the Indian occurrences with this purpose in view. If such a scheme be partially adopted, the first thing to be done is to decide which seams in which collieries it is possible to classify in grades, and then to assign them to their particular grade. Both the seam and the colliery should be taken into account. If seam X in colliery A be assigned to grade No. 1, it does not always follow that the same seam in colliery B should be so classified. Careful sampling and analysis in each case will decide to which grade the coal of a particular

seam in a particular colliery is to be assigned. Even then, periodic checks would have to be made to ensure that the grade remains more or less constant.

The assignment to grades should be done by a disinterested party, and this is perhaps where Government might be useful. The question as to the limits of each grade is a matter which should be decided by some committee including the coal-owners themselves. Ash is, in most cases, the most important consideration, but the restriction of sulphur and the relative proportion between fixed carbon and volatile matter, as well as the quantity of moisture, are points which may have to find a place in a grading scheme.

To sum up, therefore, it seems to me—

- that there are many cases in which a classificatory grading scheme could not be applied;
- that it might perhaps be applied to certain selected seams in selected collieries when the coal is required in large quantities for a definite purpose, such as bunkering or for railway locomotives;
- that the effect of such a scheme upon maintaining a high standard of composition would be limited;
- that since the scheme is not universally applicable throughout India, its partial adoption is perhaps of doubtful value, and might create invidious distinction and dissatisfaction;
- that selection and classification might be undertaken by Government, but only with the consent of the owner.

Between Schemes II and III there seems little to choose. Either would be a boon to the buyer and ultimately to the seller.

II. Specific analysis scheme.—Scheme II is perhaps a counsel of perfection, but it is obviously the fairest for all purposes, and especially in the case of coal required for boiler purposes. The calorific value of each consignment is calculated and the price per ton fixed accordingly, with small additional penalties for ash beyond a certain percentage, excessive sulphur, difference in size, etc. In some cases, it pays to purchase coal of a high calorific value; in others it is more profitable to be content with a cheaper lower quality with increased working and transport costs.

In the Witbank area of South Africa, coal is sold to the gold mines on calorific value, the price being increased or decreased with fluctuations in this value. The principal seam in this field varies greatly in composition (Fixed carbon between 43.18 and 58.75 per cent., and ash between 24.9 and 5.26 per cent.).

In the United States, bidders for Government contracts are now requested to quote prices on the various sizes of anthracite, a definite standard of quality being specified for each size, and to state the standard of quality and price for bituminous coal. Awards are then made to the lowest responsible bidder for anthracite and to the bidder offering the best bituminous coal for the lowest price, the amount finally paid being determined by the tests made under the terms of the specifications. The specifications become part of the contract, and payment for coal delivered is made according to the standard of quality fixed. The actual quality and value of coal delivered is determined by analysis and test of representative samples taken in a specified manner by agents of the Government and analyzed in the Government fuel-testing laboratory at Washington. For coal of better quality than the standard the contractor is paid a bonus proportional to its excess of value. For coal of poorer quality than the standard, deductions are made from the contract price proportional to its deficiency in value. In fixing the contract price, the coal offered with the lowest percentage of ash is taken as a standard. Each 1 per cent. ash-content above that of the standard is assumed to have a negative value of 2 cents a ton. The contract is given to the coal which then can be bought at the lowest cost per million British Thermal Units. In Washington sampling is done by Government inspectors when the coal is unloaded.

Two classes of coal, anthracite and bituminous, are recognized and differentiated in the specifications of the United States Government. The specifications for anthracite provide definite standards of quality for each size; these standards were at first based on the percentage of ash in dry coal (dried at 105°C) but later on included the number of British Thermal Units in the coal as received. In the case of bituminous coal, samples were not required, but the applicant for the contract stated the percentage of ash in the dry coal and the number of British Thermal Units in the coal as delivered. Specification limits are wide enough to permit the use of the output of any mine or group of mines, provided proper care is exercised in mining and picking out impurities. Certain maximum limits are fixed, beyond which coal is liable to total rejection.

The Specific Analysis Scheme necessitates a continuous series of sampling and analysis. Each sample might perhaps be divided into four portions—one to be used by a private chemist for analysis, one to be retained as a check by the seller, one to be forwarded to the purchaser, and the fourth to be placed in the hands of an impartial authority for reference in case of any dispute. Government might perhaps undertake the last-mentioned role, unless they take over all analytical work. I see no reason why sampling at docks or at any large unloading centre should not be done by Government officials.

I am inclined to agree with Mr. Briggs that sampling is best done at the docks or at delivery stations when these are in India. I do not quite follow his argument, however, that sampling is made less easy by mechanical loading. I have discussed this matter with Mr. Hobson, and we agree that it should not be difficult to combine mechanical sampling with mechanical loading, especially if belts be used. Results should, if anything, be more reliable, and would, at any rate, ensure the material at the bottom of wagons being included. The worst coal and impurities are always apt to sink in the wagons and the ash percentage may be as much as 8 per cent. more than it is in the case of coal from the top.

III. Guarantee scheme.—A guarantee scheme is the most elastic of all and would fit all cases. It would require periodic checks, but not the numerous sampling and analyses of Scheme II. According to this method, consignments of coal must be within certain limits regarding composition, size, coking properties, or any other criterion desired. Bonuses and penalties for excess or deficiency of value can be combined, and a maximum limit on the deficiency side fixed, beyond which the coal is liable to be totally rejected. This scheme would probably commend itself best to buyers, could be adjusted to any conditions, and would be feasible and comparatively inexpensive.

The Coal Commission of the Union of South Africa, which published its Report in 1921, considered the question of guaranteeing the calorific value of coal sold. In this Report they pointed out that there was already in existence a grading system for the "Witbank District" coal, the calorific value of which was guaranteed (evaporative power 12·5 lbs.). They recommended that a similar system should be adopted for all coal for shipping, and for this purpose recommended the appointment of "Grading Committees." Government coal-grading committees were subsequently set up for responsible testing in the Transvaal and Natal. So far as I can gather, the particular grade of a coal is guaranteed. For this reason I have included the procedure under Scheme III, since the guarantee is the crucial factor.

The method of coal buying by guarantee was practised in Italy by the large railway companies before the State assumed ownership in 1905. These companies were very strict in their requirements. Among other conditions laid down, conformity to which had to be guaranteed by the seller, it was stipulated by the "Societa Mediterranea" that the coal supplied should have an average calorific value of 7,750 calories, as determined by the Thompson calorimeter. A penalty of 5 centesimi per ton was imposed for each calory below this minimum. The percentage of ash was fixed at 5

per cent., and a penalty of 40 centesimi per ton was imposed for every 1 per cent. in excess of this figure; but when the penalty for deficient calories and that for ash excess were both incurred, only one of these was charged, *viz.*, the greater penalty of the two. The sulphur content was not to exceed 1.2 per cent., with a penalty for excess up to 1.6 per cent., beyond which figure the coal was rejected. The limits for volatile matter and moisture were fixed at 25 per cent. and 1.2 per cent. respectively.

When the State took charge of the Italian railways, a change was made in the method of purchase, as it was thought that the specifications were too exacting. The system of contracts based on guaranteed analysis has been abolished and simpler conditions established. An office is maintained at Cardiff for the purpose of controlling the quality of supplies on behalf of the Italian Government. The supervision is very strict, and the office sees that it obtains coal of the desired quality. (See *Fuel Economy Review*, July 1924, p. 3.)

Some companies in America buy under a specification of ash content without any bonus or penalty arrangement, but reserve rights to cancel the contract if coal does not come up to specification; they consider this gives them a more effective means for controlling the quality.

It would, I think, be impossible for Government to take any hand in regulating such guarantees. The form of such guarantee depends mostly upon the purpose for which the coal is required and the conditions under which it is to be burned. In plants whose boiler capacity and grate area are small or draft is weak, only the best grades of coal can be burned, but changes in the plant can often be made in order to adapt it to somewhat inferior fuel. As in the case of Scheme II, Government might perhaps accept the position of a disinterested third party in cases where the analysis is under dispute, or might assume responsibility for all analytical work. Sampling, again, might be undertaken by Government, provided it is done at docks or unloading stations.

On the whole, there seems little to choose between II and III, and No. I might be adopted in certain cases. There seems no reason why all three methods should not be employed, but it does not seem to me desirable to make any or all of the schemes compulsory. Government can never, of course, be responsible for the maintenance of the standard of consignments up to sample whatever the basis of sale may be. This is the crux of the whole question, but with intelligent methods of sampling and precautions against bribery, it would go far towards reassuring purchasers that some check was being made upon consignments. It does not seem to me a matter of grave importance whether sampling and analysis are performed by Government or by private firms who have reputations to keep up, except that the establishment of a Government personnel and equipment would leave no seller or purchaser any excuse for not selling or purchasing under safeguards as to quality or size.

J H. PATTINSON, Esq., of Messrs. H. V. LOW & Co., Calcutta.

WRITTEN STATEMENT.

A. Possibility of economies on the coalfields.

1. **Reduction in cost at pit-head.**—There is ample scope for the reduction of the pit-head cost of Indian coals but whether such reductions are possible entirely or in part is a matter for individual management.

- (1) The first reduction would be elimination of dishonesty, such as in the Stores Department of a colliery, overestimating the output, daily hazrees, private commissions paid to colliery staff by contractors, store dealers, etc.

- (2) The wages bill and Managers' salaries and perquisites can and should be reduced to a level commensurate with the selling value of the coal.
- (3) Miner's wages could be reduced. If combination was possible a general reduction in all rates could be effected and it would not hurt the miner at all but induce him to work a little harder which would mean an increased output. A general reduction of twelve annas to a rupee could be made on the present lowest raising cost.
- (4) Regular wagon supplies would mean a saving in labour.

2. Effect of recent increase in wages.—This has increased production costs by about one rupee per ton. The following is an example on actual figures of a colliery in Jharia:—

	March 1920.	March 1924.
Raisings	14,986 tons.	14,317 tons.
Total cost per ton at colliery including royalty	Re. 1-8-7-72	Rs. 2-10-0-54
Coal raising	Re. 0-13-11-2	Re. 1-12-2-8
European establishment	Re. 0-1-1-4	Re. 0-1-4-0
Indian establishment	Re. 0-2-4-9	Re. 0-2-1-2

The same colliery raised 7,227 tons in March 1912 at a total cost of Re. 1-7-4-87 per ton.

Better housing has cost more on Capital Account and with the increase in building rates this reflects on the cost of maintenance and so adds to the raising cost per ton.

3. Effect of legislation.—For a colliery of average size costs of production have been increased by about 2½ to 3 annas per ton in Jharia and by about half an anna a ton less in the Lower District due to no Water Tax.

4. Possible savings in stacking charges.—The answer to this question is dependent on so many local conditions that a correct calculation to cover every colliery is impossible. A great deal depends on where the coal would be stacked. If the coal is stacked on the siding wharf, the cost would be less than if stacked some distance away. A round figure of 1 to 2 annas per ton would be a fair figure to take.

5. Wastage from stacking.—Here again a lot depends on circumstances: a normal wastage from stacking would be 5 to 10 per cent. less. Excess stocks would very easily turn out 20 to 25 per cent. short.

B. Possibility of economies in transport to Calcutta.

6. (a) Improvements in wagon-supply.—Improvements could be made if only low-sided wagons were supplied and wagons were supplied at a regular time every day. It would then be feasible to have screening plants erected and to load direct.

(b) Their influence on costs.—Improvements as suggested in the answer to (a) would reduce the Colliery cost and so reduce the cost of export and bunker coal by a few annas per ton.

7. Type of wagon.—Undoubtedly a low-sided wagon is the best type for carrying coal but to expect the Railways to confine the wagon supply to collieries to low-sided wagons only, would be asking the Railways to keep idle a very large amount of rolling-stock in the shape of covered wagons. This would not be an economical policy for the Railways and would entail considerably more shunting which would mean delay and finally reduce the carrying capacity of the line.

8. Railway freights.—The answer is one which requires intimate knowledge of the Railways Accounts concerned, so as to decide whether the profit on

their coal traffic is greater in proportion to the share which the coal traffic bears to the whole or not.

The increase in the Railway Freight in recent years of Re. 1 per ton appears to be greater in proportion to the increase in the running cost of late years. Further a number of the increases given during the war could now be removed and so reduce the running cost. The cost of living has undoubtedly gone down and wages should now go down in proportion. Whether this is possible or not is a matter for the Railways concerned to answer.

9. Work of Coal Transportation Officer.—The work of the Coal Transportation Officer has in no way whatever facilitated the trade in export and bunker coal. His interference has done more harm than good. In the interests of the trade, the appointment should be abolished at once.

C. Possibility of economies at the Docks and coal depots.

10. Port charges.—For the facilities received the charges are excessive and should be reduced.

(1) A river-due of 8 annas a ton for coal is excessive seeing that the coal trade receives no facilities at all and the cost of upkeep of the Coal Docks is very small. It is not fair on the Coal Trade to be saddled with having to bear a large portion of the upkeep of the Calcutta Docks when all that they are concerned with is a "Kutchia enlargement of an old canal, blessed with the name of a Coal Dock." A river-due of 4 annas per ton is a handsome payment for what is received.

(2) As regards shipping charges, 8 annas a ton to unload coal from a wagon and drop it into a ship's hold and trim it, is excessive even allowing for a share of general administration expenses. A saving of 2 to 4 annas a ton could be effected here by improved methods and the use of mechanical means.

11. Improvements in handling wagons and result on costs.—(1) An entire remodelling of the outside yard at Kidderpore would be an improvement. This is possible and will have to be done when the new Docks are ready.

(2) Turn-tables at intervals in the Coal Docks would facilitate the removal of empties and the placing of full wagons at frequent intervals.

(3) The ideal would be a means of raising the wagons and emptying them into a Bin or Shute but the difficulties are too numerous for this to be practicable. A few of the difficulties are:—

(1) Trouble with covered wagons.

(2) The height the structure would have to be above the ground level.

(3) The cost.

As regards reduction in the cost of export-coal by improvements at the Docks, reductions could be effected by the greater use of mechanical loading, by the Port Commissioners running the labour themselves and by the cancelling of the present contract with Messrs. Bird & Co.

12. Loading and shipping facilities.—The facilities are totally inadequate. Possible improvements are many; the following are a few:—

(1) Each berth should be provided with a mechanical loading plant.

(2) The labour should be controlled by the Port Commissioners.

(3) Facilities to bring coal down and stack it ready for shipment should be provided.

(4) The general lay out of the Dock Sidings should be remodelled so as to facilitate the placing of full wagons and removal of empties quickly.

13. Storage and stacking at docks.—There is plenty of stacking space at the Docks now, provided it is permitted to use it.

As regards the charges, a dumping charge of 2 annas per ton would be adequate.

Coal left on the ground for more than one week should be charged ground-rent at the rate of half an anna per ton per week or part of a week after the first week.

14. Facilities at bunker-coal depots.—The facilities at Howrah and Shalimar are adequate and, bar the introduction of expensive mechanical plants at each depôt, the improvements which might be made are all of a minor nature.

15. Depot charges.—Recent statistics called for by the Indian Mining Association proved that the rents and Municipal rates charged had been abnormally increased during the past ten years.

16. Effect of carrying charges on bunkering costs.—The increase in charges during recent years for bunker coal, such as Railway freight, boating charges, River dues, depôt rents, etc., amounts to more than Rs. 2 per ton.

D. Steamer Freight.

17. Steamer freights.—Steamer freight is mainly a question of supply and demand and this is practically governed by the freight markets of the world.

Having regard to the increased cost of maintenance and capital cost of steamers, the present ruling rates cannot be said to be excessive; that is, the steamship-owners cannot be said to be profiteering. A comparison of freight rates and bunker rates is worthy of note.

Before the war the usual freight to Bombay for coal was in the region of Rs. 4-8 to Rs. 5 and the cost of bunker coal between Rs. 8 and Rs. 9 per ton. To-day Bombay freight is about Rs. 6-8 to Rs. 7 and the bunker rate about Rs. 16. The freight rate is up, say, Rs. 2 but the bunker rate is up Rs. 8 per ton. On these figures profiteering is more on the side of the coal-owners than the steamship-owners.

E. Comparative merits and prices of Indian and other coals.

18. Comparative merits.—Comparing Indian coals with the coals of other countries, on the whole Indian coal is inferior in quality. A comparison of the analysis of the coals of the world would place Indian coals fairly far down the list.

19. C.I.F. prices of Indian coal at different ports.—

	Per ton. c.i.f. Rs. A.
Karachi	21 0
Madras	19 8
Colombo	20 0
Bombay	20 8
Rangoon	19 8
Singapur	20 0

These prices do not include loss in weight which is a very essential charge.

20. Prices.—South African coal is selling in Bombay at Rs. 19-8 per ton c.i.f.

South African coal is selling in Karachi at Rs. 18-12 per ton c.i.f.

English coal is selling in Karachi at Rs. 21 per ton c.i.f.

21. How competition can be met.—Reduce the price of Indian Coal at the pitsmouth and reduce the transport charges.

22. Possibility of new overseas markets.—I am of opinion that there are such markets in which it is possible to introduce Indian coal, but it is all a question of price, with quality, etc., to compete with other coals. Supply and demand and a competitive price govern this question and answer.

23. Special assistance to other coals competing with Indian.—In Bombay, Karachi, Colombo, and Singapore and the other ports such as Rangoon, Madras, etc., South African, Japanese, Australian, and English coals compete and can oust Indian coals at the present rates.

South African coal has the advantage of concessional rates in Railway freight also steamer freights.

As regards the other coal I have no knowledge of any concessions.

F. Grading, inspection and certification of coal.

24. Grading of coal.—I am in favour of this. But so far as Indian coal is concerned it is neither practicable nor possible for the following reasons:—

(1) Indian coal seams vary in quality so much. For example, 13 and 14 seams in Jharia are very different qualities at various points in the Jharia coalfield. The East section is far better than the West section. There is no uniformity of quality in Indian coal seams.

(2) Collieries working several seams do not, as a rule, keep each seam separate and it is not unknown in the Indian coal trade to mix seams and despatch as one seam.

For instance the majority of the coal sold as Dishergarh is not coal from the Dishergarh seam. The best sections of 14 and 15 seams Jharia have been shipped from Calcutta as Dishergarh often.

(3) To grade coal properly it would be necessary to grade it for various purposes and to fix the correct proportion of various seams to arrive at a mixture best suited for the various purposes. Taking bunker coal, for instance, pure Dishergarh or pure 14 seam Jharia would not give as good results as the pure coals mixed with some other harder coal.

(4) For locomotive purposes a mixture gives better results than the single seams. Proof of this can be had by asking Railways who use imported coal to give the figures of their tests of a mixture as against pure seam shipments.

As regards bunkers, the general quality could be improved upon by each supplier having his own standard and keeping to it. The reputation of Indian bunker coal has been ruined by bunker suppliers using this trade as an outlet for all the rubbish they have to sell.

Instead of one rate for bunkers there should be several rates according to the mixture supplied.

This grading should be done by the individual and not by anyone else.

25. Classification into grades.—Indian coals could be divided into classes and for general purposes the present rough grading is sufficient, namely:—

Special, first class, second class and third class Jharia coals.

Dishergarh, 1st, 2nd and 3rd class Raniganj.

The various coals as selected by the Railway Board for each division are quite sufficient for trade names but are by no means correct and, to keep them up to date, analysis should be taken of all seams continuously and as seams are worked out or differ the colliery's rating should be altered.

26 and 27. Measures to effect grading and control of grading.—Not being in favour of grading no answer is necessary. If, however, a grading system was adopted, the Grading Board should consist of experts capable of grading coals for specific purposes. Combustion Engineers only are the correct people to grade coal with the help of a Chemist for analysis. Mining Engineers,

Coal Salesmen and Government Officials are none of them qualified to grade coal for all purposes.

28. (a) **Inspection and certification.**—Both inspection and grant of certificates are sound but in actual practice they are more or less impracticable to be of any real value. To inspect properly would cost too much. To inspect all coal and the mixtures for each purpose would be almost impossible and unless this was done a certificate would be of no value at all. It is better therefore not to do it at all.

(b) **Agency for this purpose.**—Proper inspection and a reliable certificate being unworkable there is no answer to this part of the question.

29. **Compulsory versus voluntary grading.**—Government should not interfere at all. Let the trade settle its own difficulties.

30. **Meeting of costs of grading and inspection.**—Inspection and Certificates being impracticable, question No. 30 does not arise, but in passing it might be noted that the question of reducing costs has been raised and now a further charge on the price of Indian coal is suggested.

31. **Sale on analysis.**—A guarantee of quality is possible but what is it worth and who, bar the supplier, could give it? A guarantee by the shipper would be worthless and a guarantee by an outside party, unless they checked every wagon of coal put into the ship, would also be worthless.

Supposing a guarantee was given, how would it be possible in law to prove the guarantee unless every wagon from the start was proved, and then you would come up against collieries working several seams including good and bad seams.

As regards calorific value as determined by analysis, on the face of it the suggestion is sound but there are many objections.

- (1) The Indian coal-seams vary so much that a Colliery-owner would be very foolish to sell his coal on a calorific basis unless he had a very safe margin and when you get this margin the selling on a calorific value would become more or less of a farce.
- (2) The question of drawing samples and making the analysis would have to be very carefully considered to protect both buyer and seller from each other.

G. Pooling of coal.

32. **Practicability of pooling and its effects.**—The pooling of coal is practicable but not possible as far as Indian coal is concerned. This comes back to combination in the Coal Trade and that is impossible. If two or more firms wish to join together let them do so on their own, but there is one thing certain the combination would not last long because the main feature of a combine, namely, "mutual trust," would not be one of the features of such a combine.

33. **Effects of improved facilities on pooling.**—If the Coal Trade is given a steady and adequate supply of wagons for export coal and additional facilities at the docks and depôts and is left alone, that would be the soundest solution of the entire problem.

34. **Compulsory versus voluntary pooling.**—Compulsory pooling is most undesirable and impracticable. What the Indian Coal Trade wants is to be left alone to work out its own salvation; other trades are left alone, so why not leave the Coal Trade alone? If the Government consider the Indian Coal Trade is incapable of looking after itself, then the best solution is to nationalise the mines and pay the present owners a royalty of, say, eight annas a ton and then they can grade, pool, put on countervailing duties and reduce or increase costs at their leisure.

Oral examination on the 12th November 1924.

General.—I have been 18 years in the coal trade as Managing Director in Calcutta and also was in charge of a colliery for some months. My firm exports

on a large scale. In the last two or three years their shipments amounted to about 6 to 7 lakhs of tons.

A. Possibility of economies on the coalfields.

1. Reduction in cost at pit-head.—I am of opinion that it would be perfectly feasible to bring the value of Indian coal at pit-head down from an average selling rate of Rs. 7-11 f.o.r. to the level Rs. 5-9 of South African coal; the methods for doing this are given in my written reply.

(*To Mr. Banerjee.*)—I don't know what other companies are actually doing; my firm is trying to reduce costs. I know some collieries have appointed managers on lower pay. I remember the attempt to standardise wages when I was Chairman of the Indian Mining Association: it lasted only two or three months; there was no combination.

I don't say that the pit-head cost can be brought down about Rs. 2 a ton but the selling price could be; which is a very different matter. Selling price includes other charges, such as taxes, fees, commissions, interest, etc. I should like to know how much you reckon as profit if the average pit-head value is taken at Rs. 7-11: many collieries would say none; the cost of raising depends upon the particular colliery: you can give all sorts of figures for this.

(*To Mr. Bell.*)—I should put the margin between the actual cost of raising and the actual price at which coal sells, at about Rs. 4 a ton not in every colliery but it is a possible margin. I shall give you an actual case, in which a total raising cost is Rs. 3-7 a ton. This includes everything except depreciation, for which you may add 10 per cent. of the capital value. Allowing, as you must, for development at say Re. 1 a ton, the selling cost comes to Rs. 5-2 in one case, Rs. 6 in another and in another Rs. 4-12, omitting in all cases a dividend on the Capital of 10 per cent. Of course depreciation at 10 per cent. is more than the income-tax authorities allow: it is a liberal allowance.

(*To Mr. Banerjee.*)—Costs vary with the output. The raising cost at one colliery raising 15,000 tons was Rs. 2-9-4. You cannot say what the cost would be, on the above basis for a colliery raising 2,000 tons. A great deal depends on the conditions at the colliery. Multiply 15,000 tons by Rs. 2-9-4 and divide by 2,000 would give you the cost on a basis of Rs. 2-9-4.

(*To Mr. Bray.*)—I do not know what is meant by average raising cost being Rs. 5-7. To get an average cost, you would have first to fix a basis for it. Some include in it development charges, royalty, etc., some do not. Personally I should not care to give any figure for an average raising cost over the entire coal fields.

(*To Mr. Bell.*)—I cannot give you the market rate for Dishergarh. There is no demand just now and the price would depend on whether the seller is fully sold or not. My firm has not got any. The price for special Jheria is Rs. 7 to Rs. 7-8 a ton f.o.r. and of first class Jheria Rs. 6, so the price of Dishergarh ought to be about Rs. 8 to Rs. 8-8, taking it to fetch Re. 1 more than special Jheria. The price of 2nd class Jheria is about Rs. 3-8 to Rs. 4.

When I refer to "regular wagon supplies" I mean suitable wagons being placed at colliery sidings at regular intervals every day: then we could avoid stacking, by loading direct from the tubs through screening plants. I admit that in theory, wagons are supplied regularly now at 7 A.M. but it is different in practice. All the collieries cannot get wagons at the same time.

(*To Mr. Legge.*)—I should think that it is the same all over the coal fields. I have not gone into the question recently; managers might be asked to send lists of hours at which wagons are actually placed over a series of days. Only two or three days ago I had wagons standing loaded for two days in a colliery siding and received no empties for 2 or 3 days. The reason given was that the key of the siding padlock had been lost.

2. Effect of recent increase in wages.—The margin between my figure for cost per ton and those for coal raising and European and Indian establishments, covers cost of stores, main gallery driving, repairs and renewals, underground and surface labour, royalty and general and recruiting charges.

Indian establishment means clerical establishment. The cost for this has come down because recently we have reduced their number and their wages.

3. Effect of legislation.—The legislation to which I refer in my written reply includes Workmen's Compensation Act, the new rules under the Mines Act which are mostly in force already and which would increase costs if they were followed strictly, the Mines Boards of Health and, in Jharia only, the Water Board.

(To Mr. Bray.)—As to contemplated legislation, I would mention particularly the contemplated Rescue Brigades and protection to the steel industry.

(To Mr. Banerjee.)—The employment of additional men under the new Mines Act rules would, I estimate, add $\frac{1}{2}$ anna to the cost per ton. If woman labour is prohibited, cost per ton will not be increased: you will have to replace both women and men by mechanical appliances.

5. Wastage from stacking.—(To Mr. Banerjee.)—It might be 50 per cent. if you left it long enough.

B. Possibility of economies in transport to Calcutta.

6. Improvements in wagon supply.—There is something to be said in favour of using covered wagons to prevent pilfering, but for easy loading and easy discharge of minerals such as coal we want open wagons. Pilfering depends on how long the wagons are left in sidings on the way down: quick transit would mean a lot of saving. There is a plant which can load direct into covered wagons, but the disadvantage of it is that it has to be on a much lower level than the ordinary screening plant: it works by lifting a wagon first at one end and then at the other and filling each end through a shoot. For proper screening you want a plant raised much higher off the ground.

(To Mr. Whitworth.)—Certainly moving your wagons through a screening plant presents difficulties: but a colliery big enough to instal such a plant could afford to put in its own locomotive and remodel its yard.

7. Type of wagon.—(To Mr. Legge.)—I find there is a fair amount of overloading of wagons but I do not think that it is due entirely to the load line being wrong. I have not studied the point and cannot say in what proportion of wagons there is no load line. To my mind overloading is mostly due to the variations in the specific gravities of coal, and, for the rest, to unadulterated carelessness at the collieries. The railways are not to blame: they fix an average load line; it would be more satisfactory if the collieries measured their own load line, but they will not: the difficulty of laziness and carelessness of the staff comes in: the manager cannot look to this personally. I would suggest that each colliery should have its own weigh bridge; that would save a lot of over and under-loading. The railways should re-weigh the wagons: I do not suggest that they should accept colliery weighments. As to demurrage I have had a certain number of bills—not many. This was due either to railways putting in wagons at night when there were no coolies, or to the collieries asking for more than they could load, or to accidents, strikes, sickness and so on. I do not regard demurrage as a serious matter.

As to the "ten-hours system" preventing irregularity in placing wagons at colliery sidings, I do not believe it possible to put in wagons on every section before 7 A.M. I have not looked up the details lately. If we get wagons before 7 o'clock everyday, then there should be no complaints. We have collieries on both fields. If I may refer particularly to the Bengal Nagpur Railway we do not get the wagons day by day as we need them but we get each month the full number needed. At one of our collieries, the trouble is defective water supply for their engines: the pilot engine has to go back for water when it reaches the colliery siding and for that day we get no wagons. Supplies have improved recently. It may be different now but we certainly used to have wagons placed at irregular intervals during the day—and not enough of them.

9. Work of Coal Transportation Officer.—So far as collieries are concerned they get only heaps of papers of various colours which are not always acted upon so far as my experience goes. I can supply details of a case in which no coal came down at all for a steamer for Rangoon and I should have been

in great difficulty if the Chief Mining Engineer had not come to my assistance with coal. I admit that there has been an improvement in regard to wagons lately but I think that it is due to improvements on the railway. The Coal Transportation Officer may have helped to keep the railways up to the mark, but I doubt it. I give the credit to the pooling of wagons and Mr. Legge's department. I should not agree that if the Coal Transportation Officer were abolished any system of preference to certain kinds of traffic is needed: except for loco coal. Let the people who want wagons fight for them—and that is what the present system comes to. If you give preference to one interest, other interests protest and get it too: then all are on a level again.

(*To Mr. Bell.*)—I admit that the result might lead to undesirable practices; but is the present system free from it?

(*To Mr. Bray.*)—The remedy is improved transport by the railway: it is purely a matter of traffic arrangements. If the railway can transport the coal, no preferential treatment is needed: the difficulties at the docks would solve themselves and turning round of wagons would be expedited. From a selfish point of view I should like a preferential supply but it is not fair and it is not in the general interests of the trade. I do not see why you should give preference to consumers in, say, Colombo to those in India. It would suit you and me as exporters to have preference but I understood this Committee is for the benefit of the Coal Trade and not for a few. On these lines I say no preference. It is true that a few days delay is not so vital to the ordinary consumer as to the exporter, but this would not arise if coal could be brought down beforehand. I agree that 40 per cent. would be enough to bring down beforehand. If excess coal is left after the ship has loaded, I see no objection to high rates being charged on it. Sometimes an exporter will order 2,000 tons when he only wants 1,000: but this is due to fear of the railways not supplying wagons or to his suppliers letting him down. If a few hundred tons are left over probably some other shipper would take it over.

C. Possibility of economies at the Docks and coal depots.

10. Port charges.—I have been a Port Commissioner and know something about these. My view is that each trade should pay in proportion to the benefits which it receives.

For the return that coal gets, a charge of annas 8 a ton on it, is excessive even if other trades pay Re. 1. It is for their benefit, not for that of coal, that the money is being spent on new docks, warehouses, jetties, etc. The question is whether the Port Commissioners' profit out of the 8 annas on coal is or is not greater in proportion to their profit out of the rupee on other things. The funds required for the new docks should not be taken from commodities which do not get any benefit from them. If it is argued that most of the money goes for the upkeep of the river then I say the ships should pay it. This would mean that the shipping companies would put it on to the freight, but they might not be able to retain it. As it is, there is this invariable charge of 8 annas on the coal trade and no chance of avoiding it: under my proposal they would have the chance of escaping it if freights went in their favour.

As to shipping charges I should say a fair charge would be 4 to 5 annas a ton. (*To Mr. Banerjee.*)—I cannot say what is the cost of upkeep of the coal dock: it cannot be much.

11. Improvements in handling wagons, and their result on costs.—The Beckett Plant is quite sound, if it is used properly. At present the coal is dropped from the bucket into the bottom of the ship, and so broken. So used the plant has no advantages over hand loading. The remedy is to lower the buckets to the bottom of the hold.

I have no data as to the comparative cost of mechanical and hand loading.

What improvements are needed as regards remodelling the yard is a matter to be decided by Engineers. All I can say is that there must be scope for it with an antiquated lay-out such as now exists. Loaded wagons ought to be able to get in more quickly and the empty ones to be got out instead of a whole bunch

of empties being left till every wagon on the siding is unloaded. I do not know whether the delay is between the Dock Junction and the berth or at the berth itself. But this sort of thing happens : you hear in the morning of some wagons being in the yard and you do not get them till next day. The Port Commissioners dislike unloading and push the wagons into sidings anywhere in the docks to avoid it. There is a continual fight between the Port Commissioners not wanting to dump coal and the steamship people.

How long it usually takes to load a ship, I can't say exactly, but I can give one or two cases. A ship arrived to load coal for the Ceylon Government Railway at No. 23 berth at 2-15 p.m. on the 8th October, we got no advice till the 9th, and could not start loading till the 10th. She finished at 3-30 p.m. on the 23rd. She loaded in that time 7,057 tons. Another ship commenced loading at 5-30 p.m. on the 25th October and finished taking in 7,536 tons by 10-30 on the 31st October. It takes 7 or 8 days on an average to load a ship. It should be possible to arrange for wagons to come down during that time but we have to contend with the irregularities of the railway. A preferential system of wagon supply would obviate the necessity for dumping to a certain extent but you cannot be sure of getting wagons.

There is no dumping charge levied at present and that is the whole trouble. I would welcome a dumping charge of say 3 annas a ton for the simple reason that shippers would have an incentive to load coal quickly. It is a disgrace to any port when a ship like the S. S. Surada takes 13 to 14 days to load 7,000 tons : a ship has only a certain number of lay days ; and for a ship to be left with only four or five days to discharge it is not fair on the consignees. The whole thing was due to the absence of a dumping charge and quarreling between the Port Commissioners and Messrs. Mackinnon, Mackenzie & Co. There were orders given and cancelled and there was delay on the railway as well. If it had been possible to dump coal at 3 annas a ton, the coal would have been ready there. What the Port Commissioners give with one hand they practically take away with the other.

(To Mr. Bell.)—I certainly think that there is something radically wrong with the Railways at the docks. The sidings are antiquated. But as to the yard outside I suppose it will be remodelled when the King George's docks are laid out. That will assist wagons to move in and out easily.

Some of the coal berths are fitted up with the Beckett plant ; it would certainly be an improvement to fit the other coal berths also with the Beckett plant if the plant is used properly. But the plant is at present used not for coal but for manganese ore.

(To Mr. Bell.)—I have had experience of large ports which ship coal in other parts of the world,—Liverpool and one or two ports in America : in comparison with them Calcutta is not up to date. But the difficulties here are very much greater than in those ports. They can load in an altogether different way, by lifting wagons. Here the ground-level is practically the water-level and if we wanted to load by picking up the wagon, we should need an enormous structure and raise wagons by a lift or something of that kind. It would cost too much. If we have to export no more than we do now coolies will do. On the 1st of October, I had 2,045 tons actually loaded at the plant in one day.

I am definitely of opinion that the Beckett plant is quite sufficient for Calcutta provided always that it is properly used.

As regards my remarks at the end of my written reply on this point, I say that Messrs. Bird & Co. must make a profit and the Port Commissioners could reduce their charges to the extent of that profit if they took over the work. There is no reason why they should not do this work themselves : the success of this depends on having a regular demand, but I take it that the Committee is here to ensure that regular demand—it depends on regular exports. Decidedly if Messrs. Bird & Co. are being paid annas 2-6 for dumping coal, they are making a profit which could be saved.

(To Mr. Banerjee).—I believe that the Port Commissioners guarantee a profit to the labour contractors. Charges would probably be reduced if there were competing contractors but I think that the Port Commissioners should take it over.

13. Storage and Stacking at the Docks.—Under the present arrangement the Port Commissioners give 10 days' free time and after that charge a rent of 1 anna per month or part of a month. But I advocate a higher charge for the simple reason that it would protect the trade against itself; it would prevent people without shipment orders from dumping coal as a speculation and so ousting genuine shippers; one week's free storage is quite enough.

There is a certain amount of preferential treatment being shown in regard to dumping. To give an instance I have seen 5 or 6 thousand tons of coal belonging to Messrs. Andrew Yule & Co., Ltd., dumped before a ship came in, at a time when I could not get down the coal which I had to ship for the Chief Mining Engineer. This was a few months ago. Mr. Whitworth will agree with me that his department has been trying for some months to get stocks down but in vain. I have seen dumping of coal by firms on other occasions but didn't enquire to whom the coal belonged. The dock people could give details. I should oppose dumping depots being allowed at the docks for individual shippers.

14. Facilities at Bunker coal depôts.—The minor facilities to which I refer are dredging and extension of sidings to the river's edge, with a view to reducing the lead.

15. Depôt charges.—As to carrying charges, in 1915 we paid contractors Re. 1-3 a ton for boating coal from Shalimar and trimming into bunkers: now we pay Rs. 2, i.e., annas 13 increase. River dues used to be annas 3 and are now annas 6.

E. Comparative merits and prices of Indian and other coals.

18. Comparative merits.—The very best African coal is in my opinion better than any Indian coal. But you may or may not actually get the best African coal any more than you get the best Indian coal, also it all depends on the purpose for which the coal is needed.

Bombay and Karachi are the only two markets where African coal is selling cheaper to my knowledge: probably it is the same in Colombo. In Singapore the competition is with Japanese and Australian coal. If you shipped really first class Indian coal, you could compete with Japanese, South African or Australian coal for certain purposes. I should even say that for every purpose in each of the places named there is a suitable Indian coal: but whether that coal could compete is a question of price and quality.

(To Mr. Legge).—If you cut your profit to a low limit you could compete with South African coal in Bombay to-day.

19. C.i.f. prices of Indian coals.—I got my figures by cutting down my estimates to the absolute rock-bottom prices. Rs. 8 is the pit-head price. You could easily take a rupee off that.

If you allow a 10 per cent. dividend as a fair return on a mining investment and work back from that on present raising costs you ought to be able to sell Special Jharra at about Rs. 5-12 a ton at pits mouth. That would leave sufficient for a 10 per cent. dividend, but it really depends on the steamer freight, you might get it at Rs. 6 or Rs. 7. Mix First Class Jharra with it and you could reduce the price further.

(To Mr. Banerjee).—I took steamer freight at the following rates:—

	Rs.	A.	P.
Karachi	7	0	0
Madras	5	8	0
Colombo	6	0	0
Bombay	6	8	0
Rangoon	5	8	0
Singapore	6	0	0

I should put other charges at the following figures:—

	Rs.	A.	P.
Railway freight	3	8	6
Port charges	1	0	0
Finance	0	8	0
Insurance	0	4	0
Establishment and administration	0	3	6
Commission	0	8	0
Loss in weight	1	0	0

As to variations in freight I can quote the following actuals:—

		Rs.	A.		Rs.	A.
1913 December	Rangoon	3	6	Karachi	6	4
1914 January	Bombay	5	8			
„ February	Karachi	5	8			
„ May	Singapore	4	4	Bombay	5	2
„ June	Bombay	5	0	Rangoon	3	8
1915 April	Rangoon	9	8			
1916 June	Rangoon	12	0			
1924 March	Bombay	9	0			
„ May	Bombay	8	0			
„ June	Bombay	7	8			
„ To-day	Bombay about	7	0			

The lowest rate at which I can sell special Jharia is Rs. 6: we can compete in Bombay on that basis and are competing now.

23. Special assistance to other coals competing with Indian.—Steamers take cargo to South Africa and have to come to India for a return cargo: it therefore pays them to take a coal freight to India cheap as it saves them coming up light. If freight from Durban to Bombay is Rs. 9 per ton, then at the present rate of exchange South African coal does not appear to have any advantage over Indian coal in Bombay as regards steamer freight.

F. Grading, inspection and certification of coal.

24. Grading of coal.—I say that there is no way of insuring that the purchaser gets what he sets out to buy. Grading will not do it, and I certainly should not advise sale by analysis. The purchaser has to trust the seller in coal, whatever he does in other trades. I should say that it is the same in South Africa. There is no method of checking that a particular coal is from South Africa at all or that it is the coal named. So with Indian coals, you cannot tell whether the class is what it pretends to be—unless you had it checked by some outside authority and I do not believe any such authority to be possible. Some one would have to check every wagon at every colliery and make sure that the coal was from the actual seam quoted. I am afraid that it is impossible to prevent a colliery which works, say, seams 13, 14, and 15 at Jharia from mixing the three.

G. Pooling of coal.

32. Practicability of pooling and its effects.—(To Mr. Nanerjee.)—My experience of attempts at combination is that they are futile. Some years ago certain firms wanted to have weekly instead of daily payments of wages in the lower field. They found that success depended on the whole trade coming in: I was asked if I would join and I agreed. With a few weeks I was informed by one of my collieries that the European colliery next door had promised our miners baksheesh of Re. 1 and daily payment on account, with weekly settlement on Saturdays, which amounted to nothing more than paying Saturday's wages

then. So I informed the Committee that I was finished with it. I think that combination is impossible.

Then there was another attempt at combination, organised by Mr. Edward and myself, which aimed at a general association for selling all coal and so keeping the price up. There was a meeting held for drafting Articles of Association. I think Mr. Bray was one of the persons who objected, on the ground that his firm's Indo-China steamers could not burn any coal except their Bararee coal. Another firm flatly refused to join, and that ended the combination. The thing is that coal firms cannot trust each other. Meetings of the selected few are held and they all agree to sell Bunkers for instance at Rs. 17. Each member returns to his office and promptly sells at Rs. 16-8, by giving an extra commission in some cases and by deliberate reduction in others.

34. Compulsory and voluntary pooling.—(Mr. Banerjee.)—Compulsory pooling I understand to mean that only certain people who agree to pool should be allowed to export coal. One very obvious instance of Government interference in the past was the prohibition of the export of coal.

K. M. KIRKHOPE, Esq., Director of Inspection, Indian Stores Department.

[NOTE.—In forwarding this reply to the questionnaire the Chief Controller of Stores, Indian Stores Department, at whose request it was prepared, explains with reference to the answer to Question 19 that although his department does not, as a general rule, deal with the purchase of coal it recently at the request of an indenter called for competitive tenders for the supply of coal required for a large construction work.]

WRITTEN STATEMENT.

General.—I am entirely ignorant of Indian Coal Mines and have only seen the upper end of the shaft of any of them. I am also ignorant of the working of the coal sidings and also of the working at docks. My experience is confined to carrying, unloading and using Indian coals. I have not used any but Indian coal except for certain quantities of English coal chiefly in the form of briquettes.

A. Possibilities of economies on the coalfields.

1. Reduction in cost at pit-head.—While I have had no experience at the mines, my experience of other labour is that increased wages has tended to idleness and when labour is in defect of demand, as it appears to be, the whip hand is with labour. The only remedy is to dismiss consistent absentees which cannot be done when labour is scarce. It is clear from the tables published in the supplement to the I. T. J. of November 6th, 1924, that there has been a great falling off in raisings amounting to from approximately 19 per cent. *per capita* between 1919 and 1921 figures to about 13·5 per cent. between 1919 and 1923 figures. It is observed that in 1921, a year in which labour was perhaps at its worst, and strikes and passive resistance were common all over India the production *per capita* was at its worst. The increase in 1923 is a decidedly favourable sign and corresponds to the attitude of labour in other industries.

4. Possible savings in stacking charges.—I am not quite sure what the system is in coal yards but on railways it costs about 1½ as. a ton to unload coal from wagons and stack it. It probably costs as much at the coal fields. To load from stacks to wagons also costs about 1½ as. a ton where labour is cheap. It may be taken, then, that on the coal fields this is approximately the extra cost of first stacking and then loading up, that is, 3 as. a ton. It is assumed the coal is first loaded into trucks for carriage to the stacking ground.

5. **Wastage from stacking.**—I believe the wastage is not very great. Coal is broken badly by being handled frequently and some flies off in dust. Some is broken so small as to be useless. The total wastage is probably not over 3 per cent. We have exactly these conditions on railways where coal is unloaded from trucks, stacked and probably left for anything from 3 to 6 months and then loaded on to engines. The loss is never taken into account and apart from possible loss of volatiles, the loss in bulk cannot be above 3 per cent.

B. Possibility of economies in transport to Calcutta.

7. **Type of wagons.**—The type of wagon to be adopted will depend entirely on the unloading arrangements at docks. If these are arranged for tipping wagons up at one end then a large door hinged at the top should be provided at each end to let the coal shoot free. If, on the other hand, the trucks are run into a cylindrical tippler and turned practically upside down the present open type wagons are suitable though it would be convenient to have them all of the same height or alternatively to arrange for the holding down gear to engage with some portion of constant height. In this type of tippler axle boxes will require attention to prevent oil running out of the boxes.

C. Possibility of economies at the docks and coal depôts.

13. **Storage and stacking at docks.**—Somewhat parallel experience shows that stacking is a necessary evil in India owing to the impossibility of accurately co-ordinating arrival of transfer vehicles.

E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—The chief difference between Indian and imported coal is the higher calorific value of the latter and the lesser ash. The higher calorific value means more heat per ton and ash though in some circumstances useful is in general difficult to get rid of and lowers the value of the coal.

19. **C.i.f. prices of Indian coal at different ports.**—Tenders received by this Department in July last for coal delivered at Karachi showed Indian coal with ash content up to 18 per cent. and B. T. Us. per lb. as 12465. The Calcutta Coal Combine with a mixture of 2/3rd 1st class Jharis and 1/3rd 2nd class Raniganj showed an ash content of 16.92 and B. T. Us. 12227 per lb., a mixture designed to bring the price to Rs. 7/8 a ton, average, at the pit mouth. The following foreign coals were offered at 32s. 9d. per ton c.i.f. Karachi, say Rs. 22-5-0 at exchange on date of tender.

	Ash.	B. T. Us.
Natal Navigation	7.41	14000
Northern Navigation	8.20	13700
Durban Navigation	9.70	13330
Burnside	7.30	14490
St. George's	5.75	14683

And the following at 31s. 0d. a ton c.i.f. Karachi, say Rs. 21-8-0 at exchange on date of tender.

	Ash.	B. T. Us.
Witbank	18.10	12339
Witbank Schoogegezicht	14.95	12234

Now the I. T. J. gives freights as follows for 1923 :—

(a) *By Rail.*

	From Raniganj.			From Jharis.		
	Rs.	A.	P.	Rs.	A.	P.
To Calcutta	3	5	0	4	8	0
Bombay	15	6	0	13	2	0
Karachi	17	6	0	16	11	0

For full loads at owner's risk, owners to load and unload.

(b) *By Sea.*

	Rs.	A.	P.
Calcutta to Bombay	8	6	0
Calcutta to Madras	6	9	0
Calcutta to Karachi	8	0	0

The average coal wagon holds about 18 tons and to load would probably cost 1½ as. per ton and to unload 1s. per ton. The wharf* dues at Calcutta are not known. The c.i.f. price of coal at Karachi in accordance with the above figures must be, in the case of coal produced to the specification of the Calcutta Coal Combine, a little under 81s. 0d., for this coal is slightly inferior to Witbank coal of 12284 B. T. Us. value and ash content of 14·95. At the time of the quotation the rupee exchange was about 1s. 5½d. Hence the price of Calcutta Coal Combine's coal must be about Rs. 21 at Karachi leaving Rs. 13-8-0 for rail and steamer freight, loading at the pit, unloading at Calcutta, all port dues and loading at Calcutta. The figures then are:—

	Rs.	A.	P.
Cost at pit's mouth	7	8	0
Rail to Calcutta (Mixture) (Rs. 3 plus 1-2-0)	4	2	0
Freight to Karachi	8	0	0
	19	10	0
Balance for all other charges	1	6	0
TOTAL	21	0	0

A somewhat superior coal may be expected for Rs. 8 a ton at the pit's mouth, comparable probably with "Durban Navigation," which costs Rs. 22-5-0 at Karachi and this could sell in competition at Karachi at an excess of only Rs. 14-5-0, above pit mouth cost at Karachi. As a result of these tenders we found, value for value, Indian coal at Karachi could not compete with South African coal and we were obliged to recommend placing the order for South African coal.

20. Prices.—The results of the tenders referred to in reply to question 19 above showed prices for coals corresponding closely in quality f.o.r. Karachi as follows:—

South African coal	Rs. 25 to Rs. 26-12-0
Indian coal	Rs. 26 to Rs. 28

at exchange based on 1s. 5d. These figures, however, indicate that only a small reduction in freight charges of from Re. 1 to Re. 1-4-0 or a drop in exchange would bring South African and Indian coal into very close competition at Karachi.

21. How competition can be met.—The best means to meet competition in my opinion are careful grading of coal, a guarantee as to quality, careful loading and unloading to avoid breakage, a small reduction in freight charges, and economies at the mines which it is difficult to believe cannot be effected. It will be noted from the I. T. J. that sea freights have steadily fallen. Exchange is a factor one cannot in any way control and it seems likely that any appreciable rise will bring outside coal into competition with Indian coals, allowing for any reasonable economies one may expect in raising and transport.

F. Grading, inspection and certification of coal.

24. Grading of coal.—I am in favour of grading coals both for export and bunkering. Uncertainty of quality must always be a deterrent to purchasers:

* The *Pioneer* gives wharfage, dumping and terminal charges as Re. 1-4-0.

at the same time very similar effects would be produced by a reliable guarantee of quality.

25. Classification into grades.—The grades of coal should be roughly on their calorific value and ash content and account of friability should also be taken. It is understood that it is not proposed to mix these grades, but if there is any such proposal it would be necessary to take account of the clinkering possibilities. Coking and non-coking coals would also require differentiation.

26. Measures to effect grading.—The only practical method seems to be to have a small committee to deal with grading, or alternatively an independent agency to certify quality.

27. Control of grading.—The committee should be partly official and partly non-official. The Mining Engineer to the Railway Board and an officer of the Government Test House, Calcutta, might have seats on the committee.

28. Inspection and certification.—I am in favour of a system of inspection and grant of certificates of grade. The Mining Engineer to the Railway Board for the Collieries and an official of the Government Test House at Calcutta, where there is a well equipped coal laboratory, would be the agency that I should suggest for the purpose.

29. Compulsory versus voluntary grading.—Without the goodwill of the Trade it seems inadvisable to attempt grading. If they feel it to their benefit they will readily fall in: if they don't, there is probably some defect in the scheme.

30. Meeting of cost of grading and inspection.—This would have to be borne by the trade on a *pro rata* basis, a levy of so much per ton on their raisings.

31. Sale on analysis.—This seems quite possible and provided the mixtures are correct as indicated in answer to question 25 there seems no objection to the proposal. Similar checks would have to be imposed as for grading.

G. Pooling of coal.

32. Practicability of pooling and its effects.—While pooling of coal would no doubt ease both the wagon and bunkering position and result in a saving of stacking space, the other difficulties attendant on the scheme and the great variation in qualities, in my opinion, put the proposal out of the question.

Conclusion.—In general I believe very little requires to be done for the Indian coal trade. A reduction in rail freight charges may be expected chiefly because of the cheaper prices of coal to railways, the general lowering of prices of railway material, the better condition of railway wagons and the settling down of railway labour. A cheapening of sea freight may be expected but this would equally affect imported coal. Economies are likely at the pits, for there labour also seems to be settling down. The same factors should equally lower dock dues. The remedy lies also to a great extent in the hands of the coal companies who should see to their own internal economies, handle the coal in the best manner to preserve its qualities, grade it, provide the buyer with a reliable guarantee of quality, and send to distant parts only such coal as by reason of its quality is able to bear high freight charges.

**S. PITKEATHLY, Esq., Chief Controller of Stores Department
and K. M. KIRKHOPE, Esq., Director of Inspection,
Indian Stores Department.**

ORAL EVIDENCE—13TH FEBRUARY 1925, DELHI.

E. Comparative merits and prices of Indian and other coals.

19. C.i.f. prices of Indian coal at different ports.—*Mr. Pitkeathly.*—Although Mr. Kirkhope in his written reply to the questionnaire mentions particularly the tender of the Calcutta Coal combine we received other tenders

offering Indian coal. But that was one which we particularly considered because it was clear that they were making a special effort to meet the competition of Natal coal.

The circumstances which led to my Department having anything to do with this question of the coal required for the Lloyd Barrage and Canals project are explained in a reply given to a question asked in the Legislative Assembly. One of the essential points was that the supply of coal for the work must be assured in every possible circumstance because the working of coal-burning machinery costing at least £250,000 depended on an assured supply of coal. The second essential point to be realised is that the Chief Engineer, Lloyd Barrage and Canals, when accepting the idea of having competitive tenders for oil and coal with a view to deciding whether it would pay better to use oil-burning or coal-burning machinery, deemed it advisable that delivery should be based on f.o.r. Karachi. In the first advertisement which was issued it was stipulated that delivery would be f.o.r. Karachi only, but as the Chief Mining Engineer advised that most of the Calcutta coal dealers would be shy of tendering f.o.r. Karachi it was stipulated, in the tender form and conditions of contract, that tenders on an f.o.r. colliery or c.i.f. Karachi basis would also be considered. The intention of the contract was to impose on the contractor the entire responsibility for the coal as delivered at Karachi: he was to guarantee the weight and the quality and to be responsible for any shortage whatsoever: this was to be definitely secured by the provision that the coal was to be handed over at Karachi and would be subject to the buyer's inspection at that place.

We put in the alternative that tenders might be given on an f.o.r. colliery basis, because otherwise we feared large coal interests in Bengal would not tender at all thus restricting the field of competition and preventing a fair comparison being made between Indian and foreign coal. The majority of the large Bengal coal interests tendered on a basis of f.o.r. colliery only and the conditions of contract regarding holding stocks and inspection at destination were apparently not acceptable to them.

When the tenders were received they were very carefully scrutinised by the staff of my department, due weight being given to the working conditions at the sites where the coal would be used and the conditions of contract which were deemed essential. A note on the tenders was prepared by me and submitted together with the tenders to the Chief Engineer, Lloyd Barrage and Canals Construction, for his consideration. In this note I stated that I considered the tender of Messrs. Cowasjee and Sons for South African coal the most satisfactory one. I also stated that I did not consider a long term contract for coal advisable at present as matters were far from stable in the coal trade and many things might happen in the near future which might affect prices. I said that a committee to examine the coal export trade of this country was foreshadowed and the results of this committee might have a bearing on the price of sea-borne coal. I also explained that it was not improbable that the railway freight rates on coal might be reconsidered in the near future and if these rates were reduced the cost of rail-borne coal at Karachi would be substantially lower and Indian coal would be placed in a better position.

I did not then consult the Chief Mining Engineer on the tenders received: I intended taking his advice or to recommend this course to the Chief Engineer if the tenders showed that an 8 years' contract was advisable, but on the facts before me it seemed to be so clear that the Karachi firm had won the competition that to my mind no advice from the Chief Mining Engineer was necessary.

The tenders were called for on the 1st July 1924. My note giving the results of our examination of the tenders was sent to the Chief Engineer, Lloyd Barrage and Canals Construction, on the 21st August 1924, i.e., about a month before the Indian Coal Committee was appointed. The contract was entered into by the Chief Engineer, Lloyd Barrage and Canals Construction,

on the 15th September 1924, i.e., five days before the official announcement of the appointment of the Indian Coal Committee.

There is a point which I think ought to be made clear about this contract. There is obviously an impression in Calcutta that the coal is going to be used at Sukkur, but the fact is that only a very small amount of the coal will be used there. The main power station, which will be situated at Sukkur, will be oil-driven and the dredgers, steamers, etc., based at Sukkur will also burn oil. But the coal is required chiefly for dragline excavators which will be working all over the canals and for supplying them Karachi is a more suitable place than Sukkur. Karachi is 109 miles south of the limit of where they will be working, but Sukkur is about 400 miles to the north and so Sukkur is not a good centre for storing the coal. The railway connections from Sukkur are not so convenient as they are from Karachi.

Mr. Kirkhope.—One great difficulty is the handling of the coal. At Karachi the contractor would undertake this work, but special arrangements would be necessary at Sukkur.

Mr. Pitkeathly.—One Karachi contractor, Messrs. Eduljee Dinshaw & Co., tendered for Bengal coal delivered at Karachi. We considered this offer very carefully, but it was impossible to accept it. It was for Messrs. Turner, Morrison's Lodna coal, but there was a reservation that the contractor might supply coal from any of several collieries named and in addition it stipulated that they might substitute any first class Bengal coal of twelve thousand British Thermal Units or above. That is why we had to turn this proposition down.

(To Mr. Bell.)—I would point out that British Thermal Units are not the only thing that one has to consider. You can get a very bad burning coal which gives twelve thousand British Thermal Units or more.

The condition in the contract that the tenderer must be prepared to hold three months' stock was laid down deliberately after definite thought: we had to consider the possibility of railway and colliery troubles, delays *en route*, and so on, and the risk of very expensive plant being left without coal. The big Calcutta firms made no effort whatsoever to meet us as regards this condition and contented themselves with quoting only f.o.r. colliery.

Mr. Kirkhope.—You will observe that there is no definite stipulation in the contract as to the quantity which will be taken: we merely state the maximum. We stipulated for inspection and rejection if necessary at Karachi, but most of the large Indian coal firms said that they would sell on the Chief Mining Engineer's inspection before despatch from colliery instead.

Mr. Pitkeathly.—My personal experience of the Chief Mining Engineer's inspection in connection with the coal supplied for various works under my charge during the period of my employment in the Delhi Public Works Department was very far from satisfactory, and with this experience in mind and after considering the question from the point of view of an Engineer responsible for obtaining the most economical results, I felt I had no alternative but to advise the Chief Engineer that, in my opinion, the tender for Transvaal coal delivered and stocked at Karachi and subject to his inspection at that place, was the most satisfactory tender. I have no bias whatsoever on behalf of a foreign coal, quite the reverse, as my position binds me to give preference whenever possible consistent with economy and efficiency to Indian articles.

Mr. Kirkhope.—The suggestion that the Karachi contractors might have been induced to offer Indian coal if the notice had laid down that other things being equal a definite preference would be given to Indian coal is not, I think, one that would have been of any use. The tenders were very far from being equal.

(The rest of the evidence was in reply to questions from Mr. Bell.)

Mr. Pitkeathly.—The reason why the Chief Engineer in his letter referred to considered as remote the possibility of getting his supplies of Indian coal delivered regularly was that he had a general knowledge of the losses that

occur in transport and the delays as regards wagons. Also he was considering the cost of the coal at his various points of consumption.

Mr. Kirkhope.—I do not know whether he went into the figures of the cost of delivery at these various points or whether he considered that the difference of several rupees in favour of rail-borne Indian coal would compensate for the extra cost of delivery at scattered points, but I think he was going on what he heard at Karachi.

Mr. Pitkeathly.—We were not influenced by his opinion exactly, but we took his instructions that the first condition in the tender should be for coal to be delivered f.o.r. Karachi. I may say that, if I had been the Engineer-in-charge of the Sukkur Barrage, I should have followed exactly the same course. There is the great advantage when taking delivery at Karachi that you can get at the contractor directly if anything goes wrong: if you are taking delivery f.o.r. colliery you get no satisfaction if anything goes wrong and can only telegraph to a firm in Calcutta. Few of the Calcutta firms even considered the possibility of maintaining stocks of coal at the other end.

If I was advertising for coal to be used at Delhi I should certainly ask for the coal to be supplied at Delhi and not at any sea-port.

I have had bitter experience of buying coal at long distances from the points of ultimate delivery, as deliveries were uncertain and quality could not be depended on. In the case of a tender for coal required for Delhi, I consider the right way of buying would be to call for tenders for coal delivered at Delhi, but it does not follow that it would be right to buy at Sukkur coal intended for the Lloyd Barrage project. Coal wanted for Delhi is used on work concentrated in a comparatively constricted area while coal wanted for a project such as the Lloyd Barrage and Canals will be distributed over miles of country.

I do not say that the guarantee of Messrs. Cowasjee and Sons is better than the guarantee of a big Calcutta firm, but when it is a matter of a guarantee of coal f.o.r. colliery as contrasted with the guarantee of coal f.o.r. depôt, Karachi, I say that Cowasjee's guarantee is far more valuable: I do not say that any Calcutta firm would deliberately let us down, but with the long lead between the colliery and the points of delivery they cannot possibly guarantee delivery at a definite time or of definite weights. To show the belief that the local firm had in their ability to guarantee delivery and to fulfil all other terms of the contract, I may tell you that Cowasjee and Sons put down a five per cent. deposit as security: most of the large Calcutta firms were unable to agree to deposit security. Having regard to the conditions at the collieries and to the places at which the coal was wanted and to the terms of the contract and considering the chances of delay on the railways the scale was very much in favour of Karachi.

Mr. Kirkhope.—It would have been a different matter if the main power plant had been designed to burn coal: a substantial portion of the coal then would have been wanted at Sukkur.

Mr. Pitkeathly.—We should then have called for delivery at Sukkur and would certainly have considered offers on a Sukkur basis.

At the time when we were examining the tenders we did not know definitely that a Coal Committee was to be appointed and we did not know what its functions would be: all that we knew about the Coal Committee was some unofficial talk that one was likely to be appointed.

Mr. Kirkhope.—The work on the canals will not start in one area and gradually move across to others. There will be a number of different stations all over the area at which work will go on simultaneously. With the machines which will be used the work can be started anywhere and they do not have to work all from one end of a canal.

As regards delivery we had to be guided by the requirements of the Chief Engineer. I do not think that it would have been possible for rakes of wagons to come across from Bengal with the idea of detailing from them so many wagons for each of the various stations near which the draglines will be work-

ing. In fact, I think that a lot of the dragline excavators are not fed by railway stations direct. It cannot be argued from this that stocks would for this very reason have to be kept at various centres outside Karachi, because the amount of the stocks to be kept at one point will be only the minimum necessary for keeping the machines going at each of their constantly shifting working areas.

Mr. Kirkhope.—Karachi is so near the various points of consumption that even with small stocks at the various sites the chances are very remote of the work being interrupted by delays in obtaining coal from there. Bengal, on the other hand, is so far off that the chances would be very great.

Mr. Pitkeathly.—I have no personal experience of Witbank coal, but from enquiries which I have made among large consumers I find that inasmuch as the quality is assured African coal works out better than first class Bengal coal.

Mr. Kirkhope.—From twenty-five years of experience of Indian coal I should say "better than the stuff frequently supplied in practice as first class Bengal coal."

Mr. Pitkeathly.—The contract stated twenty-two thousand tons as the amount to be taken, but owing to the late arrival of certain machinery the amount actually to be taken will probably be very substantially less than this. On the original contract a three months' stock, which had to be held by the contractor, Karachi, would have been about 5,500 tons, but the contract says that the buyer will notify his approximate requirements during the year and will give one month's notice of any increase or decrease. I may say that the reduction in the amount to be taken should, in my opinion, have a very material bearing on this question of the complaints about South African coal being accepted for an Indian contract. The amount actually taken may be comparatively small.

As regards defects in inspection by the Chief Mining Engineer's staff, I am speaking from my own experience in Delhi. It seems to me, and it is the general feeling also, that in the coal industry and in other industries as well, there is no great pride in the standard of the work done. In every workshop the feeling is that anything will do so long as it gets out the work. The result of this is that our staff when accepting deliveries in India have to do five times as much work as an Inspector in England. The Chief Mining Engineer's Inspectors similarly are handicapped; they cannot really get their work done satisfactorily unless they get whole-hearted support from the suppliers. It is absolutely impossible for them to inspect every wagon that goes out of the collieries. The essential is, in my opinion, to improve the quality of the stuff that is being despatched and that can only be done by the colliery authorities giving their whole-hearted co-operation. No practicable amount of inspection can be a substitute for this.

Mr. Kirkhope.—I have had bad coal delivered to me within recent years which had been passed under the Chief Mining Engineer's inspection.

Mr. Pitkeathly.—With regard to the inspection of coal before despatch from the collieries by the staff of the Chief Mining Engineer, I should like to refer to my own experience in the Public Works Department at Delhi. I was stationed at Delhi from 1911 to 1916, and again from 1919 to 1922, and while there was employed on the staff of the Chief Engineer, Public Works Department, and I had a great deal to do with the question of coal supplies for the essential services, some of which were directly under my control. Until the war we made our own arrangements for coal required for all purposes and for its inspection. Our coal consumption probably averaged 30,000 tons of coal annually ranging from high class rubble coal for use in boilers fitted with mechanical stokers to slack coal for brick burning. Up to 1916 I myself placed many of the contracts, and in deciding the tenders to be accepted, I went on the reputation of the firms tendering coupled with an examination of the analysis given, and, in some cases, after the trial of a sample wagon or two. Supplies came through quite satisfactorily and our essential services were well and efficiently maintained. When the trouble arising out of shortage of

wagons started, we had recourse to the Chief Mining Engineer and all our demands for coal were sent to him and he entered into contract on behalf of the Chief Engineer, Delhi, arranged inspection of coal before despatch and also arranged for the supply of wagons. This system operated fairly well in the early days of the arrangement, but later on was found to be most unsatisfactory and many thousands of tons of coal of an inferior quality was passed by the Mining Engineer's inspectors and sent to Delhi. The records of the Public Works Department, Delhi, show many cases of inferior quality of coal having been supplied. These cases were taken up from time to time with the Chief Mining Engineer and, in some instances, the orders placed with firms whose coal was found to be inferior were cancelled and in others instructions to tighten up inspection were sent to his inspectors, and in still others he authorised us to refuse to accept delivery. I have no hesitation in saying that the poor quality of coal received in Delhi and the high price paid for it has resulted in a substantial enhancement of the cost of work at Delhi, and I am positive that an examination of the records in Delhi would bear this out. In 1922, it was necessary owing to the complaints of the inferior quality of coal received to allow contractors to whom the Public Works Department had previously issued coal to make their own arrangements for coal rather than use the coal supplied by the Chief Mining Engineer and there is no doubt that they were able to obtain better coal than the Public Works Department had been getting through the Chief Mining Engineer.

I may add that I understand the Delhi Public Works Department have recently reverted to the pre-war arrangement and are arranging direct for their own coal supplies. These, on the whole, have been obtained at more advantageous rates than under the arrangement with the Chief Mining Engineer, and coal of a better quality has been obtained. Since the new arrangement has been in force, a case has occurred in which coal has been supplied by a contractor which was found to be inferior to the samples on which the contract was let and it was necessary to take steps to bring the supplier's shortcomings home to him.

The point I wish to make in this connection is the need for the Indian coal industry to take steps to ensure that the quality of the coal actually supplied is in accordance with the specification or tendered sample and that no inferior coal is despatched. Inspection in this country is more difficult than in other countries, where methods of handling, etc., are more highly developed, and a higher standard of supervision is possible. Inspection by the staff of the Mining Engineer cannot be effective unless it has the whole-hearted support and co-operation of the colliery authorities. It is not possible for the Chief Mining Engineer's Inspectors to inspect every wagon that leaves the collieries and I think the largest share of the blame for the trouble which we experienced in Delhi owing to the bad quality of coal we received must be laid at the shoulders of the suppliers and not on the inspection staff of the Chief Mining Engineer.

R. R. SIMPSON, Esq., M.Sc., Chief Inspector of Mines in India.

WRITTEN STATEMENT.

A. Possibility of economies in the coal fields.

1. **Reduction in cost at pit-head.**—Costs could be reduced by increasing output; a great part of the recently increased cost is due to decreases in the output of individual collieries. Outputs could be increased by:—

- (a) a greater use of mechanical appliances, such as coal-cutters. The increased duty on imported machinery has militated against the adoption of such appliances,

- (b) laying the rails right up to the working face, and, by the use of shovels, filling the tubs there instead of at some point which may be some hundreds of feet distant, and to which the coal has to be carried in baskets. The prohibition of women labour in mines would speedily bring about this improvement in many mines,
- (c) concentration of effort on small areas of mine workings; the average output per working place is probably not more than one ton per 24 hours, whereas it might be 20 tons. Intensive working within a small area leads to decreased cost on account of machinery, plant, timbering, maintenance and supervision, etc.,
- (d) the employment of labourers of more intelligence than irresponsible aboriginals; Punjabis, Sikhs and Madrassis are already being employed in increasing numbers at the more scientifically worked mines,
- (e) the introduction of a compulsory system of regular shifts of work,
- (f) providing a regular and sufficient supply of wagons.

2. **Effect of recent increase in wages.**—I do not think that recent increases of wages have caused any considerable increase in the cost of production; six annas per ton would probably cover it.

3. **Effect of legislation.**—The rate of insurance to cover the risk of losses under the Workmen's Compensation Act is, I understand, about $2\frac{1}{2}$ per cent. of the wages bill, i.e., less than one anna per ton.

The increased cost due to the strengthening of the rules under the Mines, Factories and Boilers Acts is very difficult to estimate; the new Mines Regulations are moreover not yet in force. The application of many of the rules will lead to economies sooner or later. An average increased cost of from two to three annas per ton on this account may be estimated, but the increase will be less at the better managed mines.

The amount of the cesses levied by the Jharia and Asansol Mines Boards of Health and the Jharia Water Board can be ascertained precisely. I am unable at the moment to refer to the figures, but I do not think the total cost exceeds one anna per ton.

E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—I have had practical experience of British and Indian coals only. From analyses and general knowledge I should place the relative values of Indian and foreign coals as follows:—

Welsh coal	1'00
Australian coal	0'75
Indian first class coal	} 0'70
South African export coal	
Japanese export coal	

Much of the Indian coal shipped from Calcutta is, however, of less than first class quality.

21. **How competition can be met.**—In my opinion the competition of coal other than Indian with Indian coal can best be met by shipping only the best qualities of Indian coal.

F. Grading, inspection and certification of coal.

24. **Grading of coal.**—For the reason that I do not think any but the best coal should be shipped I am not inclined to advocate grading. A system of grading would be very difficult to apply as the coal in an Indian coal seam varies in quality from place to place. Moreover the correlation of the seams is far from complete. The Mining Engineer, Railway Board, must have full knowledge on this point as he has been selecting graded coal for State Railways for several years.

25. Classification into grades.—The first class coals include coals from the seams mentioned below :—

- Dishergarh (Raniganj).
- Sanctoria (Raniganj).
- Sibpur or Poniat (Raniganj).
- No. 17 seam (Jharia).
- No. 15 seam (Jharia).
- No. 14-A. seam (Jharia).
- Chanch-Salaupur (Raniganj).
- Ghusic (Raniganj).
- Murulidih middle sea (Jharia).
- No. 14 seam (Jharia).
- No. 13 seam (Jharia).
- No. 12 seam (Jharia).

The Jharia seams are variable in quality and there is not considered to be any first class coal west of Katras.

29. Compulsory versus voluntary grading.—I am opposed to any form of Government interference in the matter of grading.

31. Sale on analysis.—I do not think that coal can be classified by calorific value only.

G. Pooling of coal.

32. Practicability of pooling, and its effects.—It would probably be worth while for the larger firms to pool their export coal mined from seams of recognized first class quality. The contributions to the pool could be checked by a Committee of the local mining superintendents employed by such firms.

34. Compulsory versus voluntary pooling.—A compulsory pooling system may be practicable. I do not consider it advisable.

(Oral Examination—January the 13th, 1925.)

I have been Chief Inspector of Mines since 1920. Before that I was Inspector of Mines since 1906, and before that again I was Mining Specialist to the Geological Survey for 5 years. I was for 8 years connected with various collieries before I came to India.

1. Reduction in cost at pit-head.—The decreases in output of individual collieries to which I refer are, I think, most marked in first-class collieries. There have been decreases in individual collieries, though there has been an increase in the total number of collieries and in the total raisings. Many collieries which could raise 12,000 tons a month are now down to 6,000 tons.

1. (b) (To Mr. Bray.)—Certainly the cost of laying rails up to the working face would add something to colliery costs in the first instance. But there are individual miners in the United States who load as much as 50 tons a day and I consider that this amount could be approximated to in India. I consider that it is a fair comparison to quote the United States because Indian seams are even better adapted for machine cutting than are American. In England the coal is not so well adapted to machine-cutting being in thin seams.

1. (c) A few collieries have adopted a system of regular shifts. By "compulsory system" I mean one enforced by legislation. It would certainly pay the collieries but it could not be introduced except by legislation unless the collieries combined: and they will not combine. Where the system has been adopted it has been chiefly on out-lying fields in Assam, the C. P., etc.

2. Effect of recent increase in wages.—My idea in describing six annas a ton as not a considerable increase was based on the fact that the margin in

favour of South African coal is supposed to be Rs. 3 per ton against which six annas is not very important.

3. Effect of legislation.—The prohibition of female labour would involve a considerable increase of cost for a short time but would ultimately reduce them. That is my opinion for what it is worth. I think women at present keep costs up by hampering the work. They are very largely in the way and prevent speeding up: they lead to difficulties about discipline: and that sort of thing reduces output. But I fully agree that it is advisable to defer the change and to introduce it gradually.

I do not think that there is anything in the idea that the men will not work unless the women do. This idea is confined to the coal mines. There are no workmen workers in any of the metal mines in India: there are none in Burma, the Punjab and Beluchistan and there are few in Assam. I agree that a sudden prohibition of female labour would tend to a considerable increase in costs: but I think that a gradual prohibition could be brought about without much increase in costs.

(To Mr. Bray.)—When I say that the cost would decrease I only give it as my opinion. I think that you would get the work done much more quickly and you would get a quicker turn-round if the women were out of the way.

(To Mr. Banerjee.)—I certainly think that there is every possibility of replacing female with male labour. You have the whole of India to draw upon—the Punjab, the Central Provinces and Madras. I think in course of time if you paid more you could get the men. I do not consider that there is anything in the complaint that Tea labour is drawn from the coal labour centres: for very little tea labour is now drawn from Chota Nagpur. There are only 40,000 females in Indian coal mines, I think, speaking from memory, and the prohibition could be effected easily if you enforced a 10 per cent. reduction every year for ten years.

(To Mr. Whitworth.)—I can only say that I do not believe that the men will refuse to work without the women. At present they put up a show of refusal because they think that you will give way. The argument that they cannot leave their women above ground while they are down the pit is not worth much. I think that they are put up to it. After all they come to work on the coal mines because they have to, in order to earn money.

(To Mr. Bell.)—If there was no female labour in the mine to carry coal you would have to use more machinery. I know of collieries where they carry the coal 800 feet from the working places to the surfaces, all of which is waste labour. If Mr. Mackie says that 50 per cent. of the machine-cut coal is removed by women at Re. 1 per day and that if women are not allowed to work there would be the difficulty that the men would have to earn Re. 1 more per day, I can only give my opinion to the contrary for what it is worth, but I think that the gradual replacement of women labour would meet the difficulty. I consider that even in some of Mr. Mackie's collieries the tubs might be brought nearer to the working places.

(To Sir R. N. Mookherjee.)—The figure of 2½ per cent. which I give for insurance is one that I have heard as being quoted. (Mr. Bray. That would be about the correct figure.)

F. Comparative merits and prices of Indian and other coal.

18. Comparative merits.—I place Australian coal as being better than Indian. (To Mr. Banerjee.)—In Indian "first-class coal" I include first-class Jharia. The figure in the mines returns does not represent the cost per ton but the value of the coal, i.e., the selling price, as calculated from returns by mine owners and including profit. To require mine owners to state the pit's mouth value is the only way of getting a common basis of comparison for all the mines.

F. Grading, inspection and certification of coal.

24. Grading of coal.—When I say I am not inclined to advocate grading I mean an elaborate system of grading.

(To Mr. Bray.)—You could grade the coal by the colliery as well as by the seam fairly well but you could not grade by seams throughout the whole coalfield.

(To Mr. Banerjee.)—If a colliery is selling a seam which is of mixed quality, say the top half good and the bottom half inferior, they must sell on the general analysis of the whole seam: the shipment taken as a whole would approximate to the proper thing. You would have to take a sufficient number of samples from each shipment to get a right idea of the whole cargo.

E. S. TARLTON, Esq., Messrs. Bird & Co.

(ORAL EVIDENCE—MONDAY, 19TH JANUARY 1925.)

I appear on behalf of the Indian Mining Association as well as for my own firm. Three quarters of our collieries are on the Jharia field and one quarter on the Raniganj field.

General.—I cannot say that there is at present a surplus of first class coal available for export but if the suggestions which I am putting forward to-day were accepted they would in my opinion lead to a surplus for this purpose. The reason why the coal is not now available may be judged from our own experience. We have had to cut down our development-programme because we could not get away the coal that was raised. I should say that this is possibly the reason in many other cases also.

My considered view is that we could recover our markets abroad if we were assured of a steady and continuous supply of wagons and if the railways could move our output.

In my opinion the railway position is at the root of the whole matter.

A. Possibility of economies on the coalfields.

1. Reduction in cost at pit-head.—The only way in which we can reduce colliery-costs is by getting assistance from the railways.

The Barakar Company and Heilgers' Companies raise between them 2 million tons per year. We have to employ 327,126 shifts of men to load this coal. The wages that we pay to them amount to Rs. 2,32,800 and the capital cost of housing them amounted to Rs. 4,20,000. They are all kept only to load coal from the dumps.

Then we must consider the average percentage of coal reduced to dust by mining or machine cutting. A fair percentage to take for our collieries is 10 per cent.

We have been carrying the amazing quantity of two lakhs of tons of stock on an average during these last two years. This involves an expenditure of no less than Rs. 10,00,000. The wastage due to steam coal deteriorating into dust and rubble amounts to 18 per cent. of the value of the coal as freshly raised. I compute the difference in selling-price between steam-coal and dust at Rs. 2-8 a ton and this source of waste alone represents a difference in cost to us of about Rs. 5,00,000 a year.

By keeping over three lakhs of shifts of men to handle this stacked coal and load it into wagons we are keeping labour on what is really unnecessary work. Fifty per cent. of the men might otherwise be producers of coal, and if they were cutting coal instead of merely loading it we might improve our raisings by 300,000 tons a year. At Re. 1 per ton profit and taking into account four-annas overhead-charges for hauling and pumping, we should thus get a further saving of Rs. 8,85,000 a year. This would enable us to reduce our figure for colliery costs by something in the region of twelve annas per ton, nearer thirteen annas, on our whole output. But this improvement would be possible only if we were supplied with suitable wagons as and when they were indented for.

I consider that the whole of our difficulties are due to wagon-trouble and I see no way of running our mines efficiently at reduced costs unless the railway companies assist by arranging for a proper supply of wagons.

4. Possible saving in stacking charges.—The saving of three lakhs of rupees which I have mentioned above would be obtained on our overhead costs. With costs per ton coming down we should get more coal exported: that would mean more coal for the railways to carry and this again would mean more coal to be handled at the docks: the result would be an automatic reduction of costs for the railways and for the port. I think this would come about if the export of coal went up again to 3 million tons a year as in 1913-14.

It may be a fact that last year 3 million tons of coal more than ever before were dealt with by the railways, but, if they handled 300,000 tons more in a downward direction, it was not for export. In my opinion, Bombay, Colombo and Straits might buy one and a quarter or one and a half million tons of coal if things went well: and I have reason to believe that, if we could move the coal as it was raised, we could win back those markets, assuming that a reduction would be given to us both by the railways and by the port authorities in consideration of the increased amounts handled. In support of this view I quote the result of the railway rebate on export coal. Ceylon have taken $1\frac{1}{2}$ lakhs as against $1\frac{1}{2}$ in 1923, Singapore has taken 17,600 tons as against 2,400 tons, Bombay 2 lakhs as against 85,000 and Karachi 76,000 as against 56,000 and so on. (I take my figures from Boso's statement): the grand total is 1,135,000 tons as against 900,000 tons. So I believe that the rebate has done a lot of good. Even if the figures of the Singapore and Colombo imports are wrong, there is none the less some improvement in exports and we believe that a further rebate would further meet the demands of outside markets.

To Mr. Legge.—This is the only real remedy,—increased production on the basis of an increased wagon supply, full on indent throughout the year.

(To Mr. Stuart-Williams.)—I agree that there is a variation in raisings at different times of the year, making it impossible to avoid a certain amount of stacking. But this does not affect my figures as to loss by deterioration of coal and in extra labour-charges: for in working them out I have allowed for a certain proportion of stacking continuing to be necessary.

(To Mr. Banerjee.)—The proportion that this figure of 200,000 tons in stock bears to our output may be gathered from the fact that we raise 2 million tons a year. At the moment we have been despatching slightly more than we have raised but next month we shall probably be stacking some 30 per cent. of our raisings: this will go on till June when with the monsoon the output will fall and the wagon supply will be easier, and we shall then despatch more than we raise. Only a very very small percentage of our raisings is loaded direct into wagons. Even now with good wagon supply not all of our coal is going direct into wagons, for late wagon supply results in dumping coal at the depôts.

(To Mr. Whitworth.)—At a number of our collieries we are compelled to dump because we have there at present no mechanical loading appliances. But with an improved wagon supply we should instal these appliances. We have 9 mechanical plants which are all practically waste of money owing to wagon difficulties. Not being able to use them we are reduced to the level of people who have not got them.

Cost of raising.—*(To Mr. Banerjee.)* The nearest figure that I can give for raising-costs in the Jharia field is just under Rs. 4 per ton, taking underground development cost into consideration (excepting tubs and rails but including ropes and pumping, etc.). In the lower division, i.e., Raniganj, the cost would be Rs. 6. We do not include in this figure Calcutta charges or depreciation but it does include underground development. For Calcutta you might add four annas and for depreciation six annas as an all-round charge.

(To the President.) The reason why our figure for Raniganj is Rs. 2 higher than for Jharia, and not Re. 1 as stated by many witnesses, is that in the Dishergarh seam:—

- (i) We have to have artificial ventilation;
- (ii) We have to use safety lamps;
- (iii) The head for pumping is 1,700 feet; and
- (iv) We are doing sand-stowing, the benefit of which will not be felt until we come to extracting from the solid coal.

Our mines would not be a fair average for the lower field.

(To Mr. Banerjee.)—I agree that for the Raniganj field one must allow for more recruiting charges and more labour troubles.

2. Effect of recent increase in wages.—Wages have been increased 100 per cent. on 1914 rates. I doubt the advisability of reducing the miner's wages. His work is very hard indeed. There are no soft jobs in coal cutting; and one of the last sources to be tackled when cutting costs is the miner's wages. The wages of engine and firemen are 100 per cent. higher than in 1913 but the costs of living have gone up also. There is no surplus of labour on the coal-fields even now that these wages are being paid, and so I fear that if we make a cut we shall drive the labour back on to the land.

(To Mr. Bray.)—I am opposed to any reduction of wages until there is a fall in the cost of living. An attempt to reduce wages would lead to a reduction in output whereas the only method of reducing costs is to increase output. I do not know that a reduction of wages would lead to trouble with labour but I do not think that it would be fair to attempt the reduction with costs of living at their present level.

Regular shifts.—I favour regular shifts but I do not see that they will help you to get costs down except in mines which have artificial ventilation.

(To Mr. Banerjee.) Miners do not in my experience work in the fields by day and come down to the mines in the evening. Most of the labour in the steel works, etc., are agriculturists, but they work in shifts; and this applies even to the Santhals and Bauris who are employed there. Attendance falls off during the monsoon but the works are not closed down nor the output appreciably reduced.

Concentration of work in small areas.—Where we have machine mining we have such concentration. Where we have not only small areas but deep mining we cannot put down a number of shafts. In Jharia we are constructing shafts in central places to serve large areas, but where we have several seams in one mine we cannot load from one wharf and so it is not easy to work these different seams from one shaft. We shall certainly give attention to this point of concentrating the work.

Mechanical appliances.—The increased use of the coal cutting machine gives us more coal at the coal face but the trouble is to remove it when it has been got. So far we have not found a machine which loads direct from the coal face into tubs. The nearest approach is by bringing a long-wall conveyor near the working-face so that the miner may load by shovel, doing away with the necessity of carrying coal in baskets as in the old days. There is an American drag-type machine on the market but it has its drawbacks and is still in the experimental stage.

(To Mr. Bray.)—The effect of the introduction of machinery is that the costs of cutting have increased; we cannot load quickly enough to keep the machines fully occupied.

8. Effect of legislation.—This has certainly increased our cost per ton. Details are:—

	A. P.
Road cess	2 0
Board of Health	0 3
Water Board	0 7
Workmen's Compensation Act	1 6

So during the last few years the additional cost has been about four and a half annas per ton.

As regards the abolition of female labour, we have budgetted for its going out of the mines but we hope that this will not be forced upon us for a few years because it will not be possible to make good the resulting shortage of labour in a short time. The Bauris and Santhals like to keep their women in sight of them and we have to face the probability that they will go out along with their women.

Costs would walk up as a result of the decrease of raisings which would follow the abolition of female labour. That would be the most important item: the overhead charges would go up.

The miner cuts and the wife loads on an average two and a half tubs per day. The miner himself will not cut that amount and load it as well, so we have reason to think that the output will go down by 50 per cent. The direct increase of the cost of labour would be six annas a tub.

B. Possibility of economies in transport to Calcutta.

General.—Although last year the East Indian Railway moved one million tons more than before and although this certainly was reflected on the funds still the cry goes up for better railway facilities. We do recognise the difficulties experienced by the railways owing to strikes and to floods but at the same time the collieries also have had their strikes and their floods and the two sets of difficulties possibly more or less balanced each other. In saying this I am not casting reflections on the efforts made by the railways but I am discussing what all parties concerned can do towards effecting a reduction in costs. We recognise that the railways are doing a great deal and I can assure you that the collieries appreciate it.

6. (a) **Improvements in wagon-supply.**—(1) *Stabling in colliery sidings.*—(To Mr. Legge.)—Personally I do not agree with the suggestion in the written reply of the Mining Association that the wagons should be stabled in the colliery sidings. A few months ago I saw wagons stabled at one of our collieries on the lower field. An indent of ours for half a rake was to be met, and the pilot spent most of the day in taking all the wagons out of the siding in order to place twenty-five of them. If this is typical, then stabling at the colliery sidings is more of an hindrance than a convenience.

(2) *Irregular supply.*—(To Mr. Legge.)—As regards daylight loading the hours of supply on both railways are most erratic. The East Indian Railway is better than the Bengal-Nagpur Railway. At one or two of our collieries on the Jharia field we get a regular supply of wagons before 9 o'clock but at the others they come in at any time of the day or night. On the Raniganj field both the railways are very bad in this respect. Whatever system is adopted the railways should work with a view to giving us a regular supply. If we are cramped for time so as to be compelled to load by night, then there must be complaints. Picking and dassing of coal are both necessary, and they are both impossible at night.

(3) *Alternative indents.*—(To Mr. Legge.)—We have had no particular trouble about failing to get wagons because of certain routes being closed, but I should feel very much safer if I was certain that as wagons went off the East Indian Railway on to other lines the same number was put back on to the East Indian Railway.

(To Mr. Banerjee.)—It would be of some assistance if the railways could tell us beforehand, what routes they are going to close and for how long.

(4) *Improved inspection.*—(To Mr. Legge.)—It might be possible for Superintendents to put up a useful case if the District Officers had time to meet them and talk over difficulties. I understand that the District Traffic Superintendent has not the time to go out and see things for himself.

I think it would be quite a good idea to revive the monthly meetings.

I should like very much more inspection with a view to speeding up the marshalling yards. It would be an advantage if an extra assistant could be given to the District Traffic Superintendent with no work but outside inspection.

(5) *Demurrage.*—(To Mr. Legge.)—We have no great difficulties. My attention has never been drawn to mal-practices of pilot guards or difficulties about N. P. wagons. I suppose that these matters are not important enough to be reported to Calcutta.

(6) *Defective weight and load line.*—The result of the present methods of weightment is that if we are not fined in one direction we are fined in another, i.e., either for over-loading or for under-loading. I put in a statement showing the results of tests made at our Saltore colliery, which produces only Dishergarh coal with a 10 per cent. ash-content. It will show the loss that results if we load to the railway load line which is based on 42 cubic feet to the ton.

I calculate that the loss to this colliery in these weightments amounts to 10 per cent. of our coal. This is direct loss to the colliery: where does it go to?

I certainly think that we should be better off without the load-line, because it is supposed to relieve us of responsibility and is misleading. The East Indian Railway suggestion as to the use of a formula is more or less what we followed when getting out this statement as to Saltore. At this colliery we loaded according to the measurements given and these figures represent the difference on actual measurement. The question is which is incorrect, the cubic capacity shown for the wagon or the weightments at the weighbridge? We know the specific gravity of our coal and we loaded accordingly. 10 per cent. of the coal goes, as the statement shows, but none the less the consumers complain of a shortage.

The percentage of wagons in which there is overloading is not a large figure but the position is unsatisfactory. If we abuse privileges I agree that we should be penalised but the railways might make some effort to adjust such matters as these.

We come back to the need for check-weightment. If a man is present when weightment is made the difficulty of over-loaded coal would be satisfactorily dealt with. The coal would be dumped in heaps arranged according to the different qualities recognised by the Chief Mining Engineer and under-loaded wagons might be adjusted then and there with coal out of an appropriate heap.

(To Mr. Whitworth.)—The variations which are revealed by the statement from Saltore occur also on the Jharia field, but not to the same extent. I have another statement for a Jharia colliery showing that the cubic feet per ton loaded may be 45, 50, 65, etc. First class Jharia coal does not vary, though second class does. Weights and measures can tell us how many cubic feet go to a ton for each class of coal. So let the railway companies declare a content per ton for each class of coal. The collieries could load accordingly and the weighbridge would pass wagons accordingly.

If we simply load by measurement of the coal its level in the wagon is below the load-line and if we send it out like this we are penalised for under-loading.

The alternative would be to stack the coal in a bin representing 41 cubic feet to the ton and to load from it into the wagons: but that is absolutely impossible.

(To Mr. Banerjee.)—The wagons referred to in the statement were not checked by re-weightment in the presence of one of our managers. We did not ask the railways to detain those wagons and re-weigh them. What we did was to check on our own methods and then to wait for the railway receipts, knowing that we had sent away more coal than we ought to have done: but the weights as eventually shown by the railway represented precisely the carrying capacity of the wagons. So many tons could not have been lost in the short distance between the colliery and the weighbridge.

Therefore something is wrong either with the weighments or with the tare of the wagons. My object in this statement is to show that we can throughout the year get steady and accurate measurement of coal despatched. It is certainly correct that wagons which we over-loaded in making these tests were not shown at the weighbridge as having been over-loaded.

(*To Mr. Legge.*)—It was the Chaurāsi bridge at which the Saltore wagons were weighed. I do not know if it is automatic.

(*To Mr. Banerjee.*)—Probably over-loaded wagons are weighed again after adjustment but I cannot say with certainty. We have not noticed any particular loss in weight on bunker coal sent down to our Howrah depôts. We do not get full weight on the coal sent to the docks: I cannot give any percentage for this.

(7) *Weighbridges.*—I should like to know whether it would not be possible for more weighbridges to be installed, and for something to be done to make weighments more accurate and quicker.

If more bridges were put in we might develop a system, such as they have at home, of check weighment. This would give better results and facilitate the quicker movement of wagons. It might be introduced for collieries raising a minimum of 5,000 tons. I do not see the consumer accepting colliery weighments, but we might have our own weighment clerk in with the railway man to check his figures. I do not think that this is the present system: our men go in occasionally and this is not an efficient way of tackling the problem. It is no use for one colliery to send an assistant down to the weighbridge: what I wish to emphasise is that the problem of over-loaded and under-loaded coal would be dealt with efficiently if a group of collieries supplied a check-weighman who would be present continuously.

There would be no difficulty in carrying out this suggestion. As it is, as the wagon goes over the plate the official at the weighbridge notes the wagon number and the weights. Our men could do this too, thus making sure that the wagons were weighed: and, with the figures before me that I have quoted, I cannot believe that the wagons are really weighed at present. The figures prove that if the weighment is done as it ought to be, the tares of the wagons must be wrong. If a system like this is necessary at home, it is even more necessary out here.

The over-loaded coal which is thrown off the weighbridges and sent back to us is not worth the freight.

(*To Mr. Whitworth.*)—The difficulty is congestion at the yards. The idea that the whole work of loading, marshalling, weighing and despatching should be done in the yards of the big collieries, and that the railways should charge for working them, is excellent except that the freights which we pay must cover marshalling of wagons whether in colliery or in railway yards. But in general I agree with the idea and it could be carried out.

(*To Mr. Banerjee.*)—The same idea would apply in Raniganj. There ought to be more weighbridges so situated as to cause the least delay in weighing and marshalling.

(*To Mr. Stuart-Williams.*)—In England each colliery provides its own weighbridge where empties are weighed as they come in. The wagons are then loaded under the screens up to the maximum carrying capacity. If there is an order for 4 tons and a 8-ton wagon is available, it may be loaded with only 4 tons: that was the minimum allowed in my time. Then as the wagon goes out the gross weight is taken on the colliery weigh-bridge. These weights are accepted by the railway both ways.

(*To Mr. Legge.*)—The railways in England check the weights: and it must be remembered that it is a penal offence in England to certify incorrect weights. There is no reason why a system such as I have described should not be introduced in India.

It is my definite view that the railways cannot accept colliery weighments out here.

7. Type of wagons.—The ideal would be open wagons that could load flush. Even if they do not load flush we want open wagons especially where we have screening plants.

The East Indian Railway does not carry out the instructions issued by their head office for supplying opens to mechanical plant. (To Mr. Whitworth.)—The difference in the specific gravity of coals is a difficulty in regard to flush loading, but the wagons might be so constructed as to allow the first-class coal to be loaded flush.

8. Railway freight.—As regards the increase in freights being only 29 per cent. since before the war (namely, Rs. 2-15-5 as against Rs. 2-4-9), the railways know and we do not know if coal freight pays them. We were told that coal-rates did not pay before we got the rebate. If the present freight-rate pay the railways, surely if we put through the port 50 per cent. more traffic it would reduce their overheads between the coalfields and the port. We have every right to think that the more the railways carry the less will be the cost per ton mile.

It is not correct to say that, if there is a loss on every ton, the more they carry the more they lose. I agree that there is a point beyond which my argument will not hold good, but will the railways say that that point has yet been reached? If there are any points against this argument the railways might produce them. (To Sir K. N. Mookerjee.)—If provision for more coal trains interferes with other traffic then it proves that more transport facilities are needed.

(To Mr. Banerjee.)—As to seasonal rates the consumer might do more than he has done, but the limit is the amount of stacking ground available. If consumers took coal in the slack season the collieries could not bill them until the coal was used. We have arranged with certain customers to take more coal when the wagon supply is good.

We usually get a deposit of freight from up-country buyers.

Rebate on bunker coal.—I think that we ought to have a rebate on bunker coal, because it is part of our export trade, just as much as on coal sent from Calcutta for bunkering in Madras. As regards the difference made by the present high cost of bunkers in Calcutta, I can only point to the great decrease of bunkering done here.

9. Work of Coal Transportation Officer.—Certainly the Coal Transportation Officer is useful to us so long as the wagon supply is limited.

I think it is essential to have preference for shipment coal. If you have booked freight you cannot keep a steamer waiting.

(To Mr. Legge.)—Collieries equipped with mechanical loading plant are not entitled to better supplies of wagons, but they ought to be supplied with open wagons.

(To Mr. Banerjee.)—As regards the danger that preferential treatment for shipment coal would affect the industries, the jute mills and so on, we have, speaking for ourselves, suggested that they ought to take bigger supplies when wagons are plentiful, giving us better a chance of dealing with shipment. If we are to recover our export trade we must bring down the coal to Calcutta when sea freight is available. I do not think we can do without rakes or half rakes and rely only on ordinary supplies of wagons, for the reason that the railways find it easier to deal with one colliery than with several. To the argument that the railways are giving full supplies at present without the intervention of Coal Transportation Officers, I can only remark that according to my figures the collieries are not getting full supplies of wagons even now.

As regards the complaints by the railways that the collieries do not do anything to assist them, we have standing orders that the wagons should be cleaned before they are loaded and the pins should be fixed and, what is more, that the covers of axle-boxes should be replaced, if loose. Hand-shunting the wagons to get them sorted according to destination is very difficult. If only the railways would give us suitably graded sidings and

cross-points we could assist them in getting the wagons into groups: this is exactly what we want, specially when we are using screens.

(*To Mr. Banerjee.*)—I agree that a difficulty about loading wagons in groups is that the wagons are placed in the sidings promiscuously, covered and open wagons alternating and N. P. wagons in the middle of wagons available to any destination. The covered wagons ought to go up-country and the open wagons to Calcutta as far as possible. But if we try to load according to destinations we cannot observe those instructions as to loading according to the class of wagon. The railways ought to sort out types suitable for different destinations before they put the wagons into the sidings. Hand-shunting in the colliery sidings is often impossible because the accommodation does not permit it. Wagons permitting, we do load for destinations by groups.

(*To Mr. Legge.*)—Of course it makes a difference where the different stocks of coal are.

C. Possibility of economics at the docks and coal depôts.

10. **Port charges.**—Our idea is that the Port Commissioners could get down their port charges by the increase in their turn-over.

(*To Mr. Legge.*)—I am in favour of dumping at the docks in view of the present coal position, but I should like to see dumping done away with. If we could get a regular supply of wagons for export coal, we could do away with dumping. The need for dumping is affected not only by the rate at which the wagons come down to the docks but also by the way in which they arrive.

(*To Mr. Whitworth.*)—A small stock at the docks is necessary in view of the refusal of labour on the coalfields to work during *pujas*. For example, for the last three days there has been no loading. On the other hand, as we know when these *pujas* are coming, why not arrange for coal to be sent down beforehand?

11. **Improvements in handling wagons and results on costs.**—(*To Mr. Stuart-Williams.*)—In England there is only direct loading. I think the same might be done here. For example, when a ship is coming in we might know beforehand when it will be berthed. As soon as the time and the day were given when she will come alongside, it could be so arranged that the coal was sent down then to load her, provided that the railways would put through the wagons in a fair time. But, if after all the arrangements had been made, two days were lost on the line, then the position would be upset as contrasted with home conditions.

In the colliery at which I was on the Humber and which raised 4,000 tons a day, every wagon that came in was loaded and was kept standing full in the siding. When a ship was notified the wagons were simply labelled for that ship and they were out and unloaded in a few hours. The railways have no control where the wagons are to go: you send them just where you think fit. You can almost say within five minutes when the wagons will arrive: here you cannot say within days.

We should work in that direction out here. I know of no complaints about the way in which the coal is actually handled at the docks.

12. **Loading and shipping facilities.**—(*To Mr. Stuart-Williams.*)—The idea of having staithes in the tide-way would be to have a new scheme apart from the present dock system. The time for this from our point of view is not ripe and it is all a matter for the future. At the moment we are not getting all the coal handled at the docks which can be handled there.

13. **Storage and stacking at docks.**—(*To Mr. Banerjee.*)—We were taking it that there should be space for anything from one quarter to one-third for each ship. It is impossible I think to have separate depôts for each shipper if there are many of them.

(*To Mr. Bray.*)—As far as shipment is concerned, I should prefer *rakes* and half rakes.

14, 15 and 16. **Bunker coal.**—(To Mr. Banerjee.)—We do not get sufficient water alongside the dépôt jetties at ebb tide all the year round. Dredging is not done regularly: it is done only once a year or so. Occasionally we have to put three or four boats between the jetties and a barge lying in deeper water.

E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—On this question of values of different coals, I have heard statements made to our representatives by consumers who use South African coal. The points they make are: (1) South African coal is much better graded; (2) its ash-content is less and (3) its calorific value is higher. Our agents in Pondicherry have Burnside and Witbank coal. They say that they have made out a case against our quality of coal with the idea of making us put down our price, if we wish to get back into those markets: but they admit our coal to be equal to South African, in ash-content and calorific value, although our grading is not so good as South African grading, i.e., the sizing of South African coal is better, with more steam coal and less smalls. In their opinion our first class coal is equal to South African, but they are using South African coal as a lever against us to make us bring down our price 10 per cent. below the South African price.

It looks as if we shall have to sink the 10 per cent. The question is whether it is worth while doing this in the hope of getting back the business.

20. **Prices.**—(To Mr. Banerjee.)—I accept the Mining Association's statement on this point and I am not prepared to add to it.

21. **How competition can be met.**—(To Mr. Banerjee.)—I am not prepared to say whether my firm would sell at special rates for shipment coal as against coal for Indian industries. I would not favour a bounty or duty if the competition could be met by economic methods.

22. **Possibility of new overseas markets.**—We mentioned Sabang, because it used to be one of our markets in the past: I admit that the development of the Dutch coal industry is a new factor. As regards Aden, I see no reason why it should not come to be one of our markets.

F. Grading, inspection and certification.

I agree that the question of quality weighs as much with the overseas consumer as price: and so I agree with the Indian Mining Association that steps must be taken to insure that the consumer gets what he wants, but I do not agree with them as regards the scheme for grading. My firm prefers that grading should be left to the collieries because those who deliver the best graded coals will be those who will get the business. These are the lines on which they work at home, where many collieries which have a poor coal to start with make it into a first class coal by picking, screening and dressing. I think that we should do the same here. It would remove complaints and would bring up the standard of quality. This it is possible for the collieries to effect, but it is not possible for a Grading Board.

Could not the consumer abroad get the certificate he wants direct from the colliery? I fear that the Board would not give satisfactory results, try as it might. If the consumer receive the class of coal that he pays for he will give us the necessary support, but if we let the standard down, he would go past us. We have had such a set-back in foreign markets (not the seeking of the coal-companies in particular) that once we got the coals graded we would keep the quality up. I have given considerable thought to this matter and I do not see how the Grading Board can grade so as to give such satisfaction as the colliery itself.

I shall quote some practical cases. Take it the Grading Board mark Jharia 13, 14, 15 or 17 as first class and 12, 11 and 10 as second class. Now 12 seam at the Sijua end, if taken *in toto*, is undoubtedly second class coal, but leave out 3 feet 6 inches of roof coal and you will get a first class coal. The ash percentage of the whole seam is 18 per cent., but the ash percentage of the seam minus the roof coal is 11 per cent. In several other seams the seam as a whole gives a total of 17 or 18 per cent. of ash, but you can bring

that down to 14 or 15 per cent., if you omit certain parts of the seam. If the coal is graded by a Grading Board, they may possibly put into the second class certain seams which could be made first class by proper picking. Once a seam is so classed, it would always be considered second class because the coal trade is so conservative. Against this if the colliery working the coal chooses to sacrifice a big portion of the seam and make it first class precisely as is done at home, it ought to be able to sell the coal as first class without being hampered by any pre-conceived idea of the grade to which the seam belongs.

I am quite prepared to leave the question of certifying a coal to the Chief Mining Engineer so long as there is no Grading Board behind him. The Chief Mining Engineer would say, "Provided that you leave out this and that, we shall certify such and such a seam as first class coal." To quote a definite instance, we have a colliery with a 34 ft. seam of coal that is distinctly bad and which has been rejected by the Chief Mining Engineer, but a foot-by-foot analysis shows that one section of it contains only 14 per cent. ash. When this section only is picked out it will change the whole aspect of the colliery, i.e., a second class seam is picked and becomes first class.

I do not think that the suggested distrust of officials by the trade is of much importance or that that cry will still go up. The Chief Mining Engineer is much the largest buyer; he knows far more about the lower and the Jharia seams than the consumer does; and he knows what seam does and what seam does not give satisfaction. I take it that if export-coal were graded as he does grade it, we might win back the market. Those who do not grade their own coal would lose.

I agree that the Chief Mining Engineer's certificate would answer the purpose of the grading and certification suggested in the Questionnaire.

As regards allowing the rebate only to certificated coal and as regards the suggestion, which some people make, that the export of non-certificated coal should be forbidden, I can only say that, if second class coal is sent to Bombay and there sold as first-class coal as in the past, the market for Indian coal will be again destroyed.

(To Mr. Whitworth.)—I think that the suggestion as to the correct lines on which Indian coals might be graded, which the Chief Mining Engineer has prepared for the President of the Committee and which he has just explained to us, would meet the case. It would take 12 months to re-survey all the collieries and make new analyses of their coal, but that is the only alternative to accepting the Chief Mining Engineer's figures. I take it that on this proposal the Board would not count for grading purposes the section of a seam actually worked by a mine but the coal actually sold in cases where, although the whole of the seam was worked four or five per cent. of inferior coal was removed. If it is proposed that the Board should for grading purposes take the coal as the colliery are prepared to sell it and not merely on the seam taken as a whole, then that would meet our case.

I agree that whatever is to be done must be done quickly. The longer we are out of the foreign markets, the greater the reduction in price that will be needed before we can get back into them.

(To Mr. Banerjee.)—I certainly agree with the suggestion that we should like a rebate on the whole quantity despatched from the colliery and not only on the quantity shipped.

WILLIAM F. WATKES, Esq., Secretary to the Calcutta Coal Company

WRITTEN STATEMENT.

A. Possibility of economies on the coal fields.

1. **Reduction in cost at pit-head.**—Reduction in cost can be brought about by:—

- (a) Reduction of overhead charges at the colliery by standardising wages.

- (b) Reduction of Managing Agent's commissions who should be paid on the nett profits. No Managing Agents should be allowed to buy the coal from a colliery they manage and resell at a higher price in their firm's name: they should not charge any commissions on stores purchased for the collieries.

2. **Effect of recent increase in wages.**—An increase of about Re. 1 per ton based on actual figures taken from a colliery in Jharia.

3. **Effect of legislation.**—This question is very elastic. It greatly depends on how the proposed legislation would affect the collieries in R. A. P's.

4. **Possible savings in stacking charges.**—Roughly it should cost 2 annas per ton each time that the coal is handled at the colliery. Loading coal direct from the pithead to wagons is or would be more the exception than the rule.

5. **Wastage from stacking.**—From 10 to 15 per cent.

B. Possibility of economies in transport to Calcutta.

6. (a) **Improvements in wagon-supply.**—The present system of "opening stations" when the steamers are signalled at Sandheads is objectionable. It takes 24 hours for the steamer to be berthed at the Dock after she is signalled at Sandheads and at the earliest 72 hours for the coal to reach the Docks after "stations" are opened; this means the steamer has to remain idle at the Docks for 48 hours.

Recommendations—

- (1) At least $\frac{2}{3}$ of the coal should be brought down and stacked at Kidderpore Docks before the steamer's arrival.
- (2) Longer time should be allowed at collieries for loading coal for Kidderpore Docks; rushing loading at collieries means bad loading, which it is imperative should be stopped.
- (3) A more speedy service between the coal fields and Docks.

(b) **Their influence on costs.**—They would to no extent reduce them.

7. **Type of wagons.**—Under present conditions, I can suggest no alterations beyond that the more covered good wagons are used the less would be the chance of pilfering coal *en route*. I estimate that at least one ton per wagon is now lost from low-sided wagons loaded with coal, between the coal fields and Kidderpore Docks.

8. **Railway freight.**—The railway freight now charged for coal from the coal fields is high.

Taking the railway freight at Rs. 4-8-6 from Jharia to the Docks and the distance at 168 miles, this works out at 5'1 pies per ton mile, whereas taking the railway freight to Bombay at Rs. 15-6-0 and the mileage at 1,179 it works out at 20 pies per ton mile. Taking your data by allowing for a wagon carrying 20 tons of coal from the coal fields to Bombay with a running time of 30 days and earning Rs. 307-8-0 and the same wagon carrying 100 tons of coal from the coal fields to the Docks with a running time of 30 days, the railway companies could proportionately reduce their freight by Re. 1-8-0 per ton from the coal fields to Kidderpore Docks.

It would be better to give a reduction in the freight than a rebate, as it is found that it is a complicated business to obtain your rebate.

9. **Work of Coal Transportation Officer.**—From 1st January 1924 the Calcutta Coal Combine made four shipments of Bengal Coal to Bombay, and I had no trouble in obtaining the wagon supply through the Coal Transportation Officer and the arrangements made by him were very complete and there was no cause for complaint. I am strongly of opinion that the Coal Transportation Officer's appointment should not be abolished, and the only modification I could suggest is that he should be given complete control over the wagon allotment. In the case of the Calcutta Coal Combine shipments we had to bring down coal from 20 different collieries and the coal had to be mixed thoroughly at the Docks; this meant getting the wagons down in the proper order and this was done to my entire satisfaction which was

due to prompt help given by the Coal Transportation Officer, in arranging the despatches from the colliery.

C. Possibility of economies at the Docks and coal depôts.

10. Port charges.—The present charges made by the Port Commissioners are:—

- (1) Eight annas wharfage.
- (2) Eight annas river-due.

In addition to this a terminal charge of 4 annas 6 pies is made by the railways for the Calcutta end, and it is presumed this is credited to the Port Commissioners' Railway.

Wharfage is a legitimate charge against the coal shipped at the Docks. I have some doubt of the 8 annas river-dues being a legitimate charge against the shippers of coal; in other ports this would come under harbour dues and be charged to the steamer.

Recommendation—

The Port Commissioners should charge:—

- (1) Terminal charge Re. 0-4-6 received from railway freight.
- (2) Wharfage Re. 0-8-0.
- (3) Dumping charge Re. 0-2-0.

11. Improvements in handling wagons and results on costs.—The siding-accommodation at the Docks is badly laid out; the bottle-neck through which the wagons are delivered to the docks and empty wagons are returned from the docks retards work, preventing the maximum results being obtained. No provision is allowed for throwing off empty wagons, the result being that one full wagon will stop the work at the other hatches of a steamer until it is finished, to permit the empty wagons being drawn out to be replaced by full wagons.

Recommendations—

That the coal-yard at Kidderpore Docks be re-arranged so as to permit a speedier handling of wagons, and that a series of turntables be arranged between the unloading and an empty line to permit the empty wagons being removed promptly. With such an arrangement 50 per cent. more work can be done at the docks. Such arrangements could considerably help wagons being received and removed from the docks.

Beyond the dock charges recommended in No. 10 I do not consider the proposed arrangement would in anyway reduce the cost of export coal.

12. Loading and shipping facilities.—The present system of loading coal into steamers at Kidderpore Docks is very primitive and destructive, and is greatly responsible for the coal arriving in bad condition at the port of discharge.

Recommendation—

That all coal berths at Kidderpore Docks be fitted with 2 ton cranes and the coal conveyed in tubs from shore to the hold by means of the crane. This would do away with throwing the coal basket by basket into the hold and damaging it.

Till this can be done, I would suggest that tubs be placed on the steamer's deck and that the coal be loaded into the tubs by the coolies instead of throwing it into the hold and the tubs should be lowered into the hold by the steamer's derricks.

13. Storage and stacking at docks.—It is necessary and very essential that the coal should be brought down to the docks before the steamer arrives;

in paragraph 6 I have recommended that $\frac{1}{3}$ ds should be so stacked,—this I now repeat.

It is usual to allow 10 free days for cargo to be kept in dock premises; after that ground rent is charged for every three days or part of three days.

From investigations which I made in Bombay I am of opinion that the fires on board steamers with Bengal coal are due to the system of loading coal at the Kidderpore Docks. These fires were located about the same levels in the hold where the trimmers commence their work. Slack and dust is shovelled against the ships-side and the heat of the plates after the steamer has been lying in the harbour for 24 hours causes spontaneous combustion. Out of 19 vessels sent to Bombay, eight fired and this was during April - May; only one steamer fired at sea, the remainder after they arrived in Bombay harbour.

14, 15 and 16. **Bunker coal.**—My knowledge is too limited to reply to these questions.

D. Steamer Freight.

17. **Steamer freights.**—Steamer freight is ruled by the law of supply and demand. In January 1924 the Calcutta Coal Combine came into the market for a steamer to load coal for Bombay; this steamer was secured at Rs. 7 per ton. The next steamer was taken up in March at Rs. 9 and the next two at Rs. 8-12-0. I approached both the British India Steam Navigation and the Asiatic Steam Navigation Companies for freight and made an offer to fix up 4 steamers at Rs. 8; both these companies turned my offer down.

To minimise cost between over-land and sea freight to Bombay, the limit for sea freight is Rs. 8 per ton.

Coal had not been shipped to Bombay for 3 years, and the steamship owners had not considered the rates; hence my securing the first steamer at Rs. 7 led to enquiries for other steamers and Bird and Company took up a steamer at Rs. 9 which immediately jumped the price of freight by Rs. 2. This freight was demanded till July; as soon as Calcutta stopped shipping to Bombay down came the freight and to-day you can pick up a steamer for Rs. 6; this low freight is due to there being no demand.

To keep down freight we must not look for sympathy from local steamship-owners; this can only be obtained by supporting the tramp-steamer owners and letting them feel that Calcutta can put a steady business their way.

E. Comparative merits and prices of Indian and other Coals.

18. **Comparative merits.**—My experience or rather knowledge extends to the competition between Indian and African coals.

1910.

In 1910, Mr. Lithaner, representing Messrs. Martin Budd and Company, Lourenco Marques, Delagoa Bay, distributing agents for the Witbank Colliery Company, Ltd., Transvaal, introduced Witbank coal into Bombay and had it tested against Bengal coal.

The analysis given for Witbank coal was:—

Fixed Carbon	68
Ash	9
Volatile matter	23

The following figures were given to me by Mr. Lithaner, to show cost, railway freight, handling and steamer freight:—

Transcoal Coal (Witbank).

	s.	d.
Pithead	6	8½
Railway freight	6	8½
Handling at Port	1	4
Wharfage	0	1
Steamer freight	6	0
TOTAL	20	10

First class Indian coals during this period (such as Jamadoba) were selling at Bombay at Rs. 17-8 *ex* boulder.

The Witbank coal was condemned by the Bombay millowners owing to its giving off arsenic fumes. It was also declared to be inferior to the then Bengal coal received from Calcutta by sea.

During this period a small quantity of Durban coal was being shipped from the Elands-Lagte Collieries, Ld.

1924.

The African coals that took the market when the embargo for Indian coal was put on by the Government of India, were shipped from Durban and known as Northern Navigation and St. George's. Very little Witbank coal was then being imported into India. The Union Government introduced a bounty, said to be 9s. 3d. per ton, about the same time as the embargo was put on Indian coal, and by this means Durban got a firm grip on the Indian markets. In January 1924 Durban coal was being landed c.i.f. Bombay at Rs. 25. The Calcutta Coal Combine put in a shipment by the S.S. "Katharine Park" at Rs. 21-8 c.i.f. This shipment consisted of ⅓rds first class and ⅔rds second class and the price of this mixture was Rs. 7-8 per ton f.o.r. colliery. As soon as this shipment of coal arrived in Bombay, Messrs. Turner Morrison & Co. offered a shipment of "Witbank" at Rs. 20 c.i.f. which was subsequently taken up at Rs. 19-8 c.i.f. The second Combine's steamer was chartered at Rs. 9 freight and it was decided to send this cargo as a consignment one to Bombay to feel the market and to try and get in direct touch with the consumers. The whole of this cargo was landed and the coal was offered to the consumers, delivered, weighed and stacked in the Mill Compound, at Rs. 27 per ton.

This rate was made up as under:—

	Rs.	A.	P.
Price of coal c.i.f. Bombay	22	8	0
Landing charges	1	8	0
Transport from depôt to mill and weighing	3	0	0
	27	0	0

Northern and St. George's were offered at Rs. 29-8 and Witbank at Rs. 24 mill delivery. The Combine dropped their price to Rs. 25 mill delivery. This stopped Northern and St. George's being shipped from April to July when there was keen competition in the Bombay market between Bengal coal shippers (Andrew Yules, H. V. Low, Bird & Co., F. W. Heilgers and the Calcutta Coal Combine). In all 19 coal steamers were sent from Calcutta to Bombay between January and August 1924. This competition temporarily checked African coal coming to Bombay. The Combine had to drop their prices in September to Rs. 23 per ton mill delivery, as steamer freights from Calcutta to Bombay had dropped to Rs. 7 per ton and the price of African coal was also dropped. The coal shipped from Calcutta with the exception of the

shipment was good; the coal was mixed in order to keep prices below African prices. In no case was a pure first class Bengal coal shipped as the prices paid in Bombay debarred this being done. In September both Durban and Transvaal coal were again shipped in larger quantities, Africa answering Calcutta's competition by shipping graded coal, free of slack and dust, helped by better exchange which gives Africa the benefit of from Re. 1 to Re. 1-8 per ton as their dealing is in sterling. To-day African coal holds the Bombay market, the difference in its favour being from Rs. 3 to Rs. 4 per ton.

19. C.i.f. prices of Indian coal at different ports.—Assuming that pit-head prices are Rupees eight per ton for Bengal coal the following are the f.o.b. rates, Kidderpore Docks:—

	Rs.	A.	P.
Cost of coal	8	0	0
Railway freight from Jharia	4	8	6
Port Commissioners' charges	1	2	0
Insurances	0	4	0
Finance	0	8	0
Loss in weight	0	9	0
Agencies	0	8	0
	15	7	6
Less rebate	1	0	0
f.o.b. Kidderpore Docks	14	7	6

It is not practicable to standardise steamer freight. I am therefore taking a minimum and maximum rate recently paid for Bombay only, as I am not sufficiently acquainted with the other ports to express an opinion.

f.o.b. Kidderpore Dock.	Minimum freight.	Bombay c.i.f.
Rs. 14-7-6	Rs. 7-0-0	Rs. 21-7-6
	Maximum freight.	
Rs. 14-7-6	Rs. 9-0-0	Rs. 23-7-6

20. Prices.—The price at which the last shipment of Northern Durban coal was sold in Bombay is Rs. 19-8-0 c.i.f. a shipment of Withbank being offered at Rs. 17-8-0 per ton c.i.f.

21. How competition can be met.—By imposing a countervailing duty of Rs. 3 per ton on all African coal imported into Indian Ports and by giving shippers on Indian coal a bounty of Rs. 3 per ton on all coal shipped to Colombo and Singapore for a period of three years.

22. Possibility of new overseas markets.—In 1922 the United Kingdom exported—

	Tons.
To Aden	92,964
To Ceylon	232,675
To India	999,159
South Africa exported—	
To Aden	39,510
To Ceylon	254,382
To Straits Settlement	139,118
To Portuguese India	35,733
To India	516,511
	2,310,054

These markets are within the circle that can use and would increase the outlet for Indian coal by 2½ million tons per annum.

To recapture these markets the following measures are necessary. Government, railways, port authorities and the coal trade must work together.

Government should assist with a countervailing duty and bounty, railways by a substantial reduction of freight to Kidderpore Docks and a quicker train service, and the Port Commissioners by a reduction of their charges and better facilities to load coal: and the coal trade should reduce their working cost to the lowest point, and also take care in grading and loading coal.

23. Special assistance to other coals competing with Indian.—The Union Government of Africa in order to foster their coal-trade grant colliery-owners a bounty of 9s. 3d. on all coal exported from Africa. This permits African coal to find markets out of their circle. If it were not for this bounty African coals could not compete in Indian markets with Indian coals.

African coals in 1910 were in a position to quote 20s. 10d.; this same coal is to-day being quoted at 27s. to 31s. c.i.f. Bombay: deduct the 9s. 3d. bounty given them by the Union Government and Indian coal could be put in cheaper in any of the markets which the African coal now holds in India. In addition the advantage it gains in exchange must also be considered. These concessions alone give the African coal the advantage in holding the markets in India, which is a death-blow to the Indian coal trade.

F. Grading, inspection and certification of coal.

24. Grading of coal.—I am in favour of grading for classification and sizing for both export and bunker coal.

25. Classification into grades.—The present system for classing Indian coals on seams and names is incorrect.

The value of coal is to be found in its heating power and its rupee value is regulated by the maximum work that it can do in a furnace at a minimum cost. No attempt has been made in India to determine the actual purchasing value of coal, in conformity with this rule. Even in the best collieries it is common knowledge that seams vary and no buyer has a guarantee that he is getting what he is paying for. The combustion engineer in co-operation with the analyst are the two important authorities to classify coal under these conditions. A Mining Engineer would not be the correct authority to choose what coal is required for a particular boiler or locomotive.

The basis for valuation would be the analysis; the two important factors in the composition of coal for its value are carbon and ash. The most competent authorities in the United Kingdom and the United States in dealing with this question recommend the purchase of coal under the following conditions: (1) Name of colliery, (2) carbon, to be indicated by figures and (3) ash, by a letter, *e.g.*, if you purchase "Kustoor 73 c," it would indicate that you were purchasing coal from Kustoor Colliery giving 73 per cent. of carbon and from 12 to 15 per cent. of ash. This would give the purchaser some guarantee what he is purchasing, whereas purchasing on a seam or name gives no guarantee.

Grading to size is also worthy of consideration. From experiments made, sizing steam coal 2½" to 4" and loading it free of slack or dust increases its burning value by 10 per cent. It is less liable to break up during transit and arrives at destination in a satisfactory condition: and this treatment reduces ash.

26. Measures to effect grading.—Once the system is adopted the coal-trader would gradually work it on these lines.

27. Control of grading.—There is no necessity for Government to interfere, except to see that as large purchasers they give the lead and adopt the system for their own benefit.

28. (a) Inspection and certification.—I am in favour of this being left to the buyers and sellers without any interference by Government.

(b) Agency for this purpose.—I would leave the coal-traders alone to find their own Agency.

29. Compulsory versus voluntary grading.—There is no necessity for Government to interfere in this matter; the remedy is in the hands of the

buyers and sellers, who are quite capable of adopting a system to their advantage.

30. Meeting of cost of grading and inspection.—(a) The initial cost would be borne by the colliery proprietor, recoverable from the buyer in the price of the coal, and

(b) that of inspection and certification by the shippers.

31. Sale on analysis.—In addition to grading, every shipment of coal should have a certificate of analysis of the coals shipped.

All the four shipments made by the Calcutta Coal Combine had such a certificate of analysis. Mr. Briggs, the Analyst, attended the Docks every morning and drew samples of coal from the wagons and prepared certificates for coal supplied from each colliery and general analysis of the whole shipment. Copies of these certificates were sent to Bombay so that the buyer knew—

- (1) What collieries supplied the coals,
- (2) What quantities were supplied from each colliery,
- (3) The analysis of coal from each colliery, and
- (4) The analysis of the shipment.

The Calcutta Coal Combine paid for these certificates.

I would like to mention that I found these certificates very valuable in deciding what coals should be purchased to make up a mixture to get necessary calorific values and to reduce ash. I invariably found that the analysis supplied by collieries was better than the analysis obtained by the Combine. The potent discrepancy was in ash value in every case; the ash value given in the Combine's analysis was higher than that given in the collieries' analysis.

These certificates were also valuable in checking if the collieries actually delivered the quality of coal purchased. The result of these analyses further convinced me that the present system of purchasing coals on the seams was wrong.

G. Pooling of coal.

32. Practicability of pooling, and its effects.—(a) I am in favour of pooling system. I am of opinion that the combination of colliery proprietors to come to such an arrangement will never be feasible owing to the petty jealousy and mistrust amongst themselves.

(b) For bunkering it is necessary but also not feasible.

The Calcutta Coal Combine was formed as an experiment to assist smaller colliery owners to participate in shipment coal. It had no constitution, but it was the intention to have one after experience had been gained. One object that it had in view was to get into closer touch with the consumers of coal in Bombay. As long as the shipments were sold in Bombay there was a rush to join the Combine. My opinion is the Combine under a constitution would have been a great success, but unfortunately it was nipped in the bud by the greed of one of the officials who laid himself out to break the Combine for his own interests. Unfortunately I was away in Bombay looking after the interests of the Combine there, endeavouring to carry out the policy adopted. I was not aware of what was going on in Calcutta and returned too late to check the mischief done. The Combine has so far not been able to carry on what it was started to do. The experience gained is of the greatest value to show what has to be and can be done to obtain the objects it had in view.

The main point to be considered in this question is how a Colliery Proprietor is to receive payment for his coal without waiting for the coal to be sold at the other end. The Combine had no working capital, and it depended solely on selling the coal which is shipped to pay those who supplied the coal.

It had to find money to pay the steamer freight and other charges. These are the difficulties it had to work against.

In Bombay I found the Millowners disinclined to purchase the coal direct from the owners; they preferred to take the coal through a middleman. The millowners would not purchase the coal *ex ship*, but wanted the coal delivered at their mills. I arranged for this; still I found they preferred to take the Combine coal through the middleman, which in some cases cost them Rs. 3 to Rs. 4 per ton more than at the price I was offering; this was done by mixing the coal with inferior coal and giving short weights. African coal is sold at 2,000 lbs. to the ton whereas Bengal coal is sold by the owners at 2,240 lbs. to the ton. Out of 139,000 tons of Bengal coal shipped to Bombay from 1st January to August 1924, about 50,000 tons is now lying in Bombay unsold.

To enable a pooling system to be introduced I would suggest that:—

- (1) A limited company be floated with a capital of Rs. 20,00,000.
- (2) The name of the company be the Calcutta Coal Association.
- (3) It should be managed by a Board of Directors consisting of—
3 Europeans interested in the coal trade, and
3 Indians interested in the coal trade.
- (4) The objects of the company should be to handle shipment coal, and to guarantee delivery, quality and price.
- (5) It should purchase coal from shareholders who are interested in collieries.
- (6) It should guarantee such suppliers payment of their coals on delivering at Kidderpore Docks.
- (7) It should contract with railways for the supply of coal going from the Kidderpore Docks.
- (8) It should contract with consumers at various ports to purchase their coal.
- (9) It should contract with steamship owners to bunker their steamers calling at Calcutta, guaranteeing quality and price.
- (10) Arrangements should be made with the Calcutta Port Commissioners to construct a coal-bin on the river front for the Company capable of holding 12,000 tons of coal, and
- (11) As funds permit the Company should own its own steamers for transport.

The above is the skeleton of a scheme which can be enlarged upon.

In my opinion it is the only way that pooling can be done.

The benefit to be derived from a coal-bin is that steamers could be loaded in 24 hours. There would be no delay to wagons as they could be immediately emptied into the bin and released.

If the Company could be formed and had its own Combustion Engineer, this official would be of great value to the Company for he could visit the mills and assist them to take necessary precautions to see that the coal is burnt under the proper conditions to effect economy and at the same time see that the coal has fair treatment.

W. F. WALKER, Esqr.

(Oral Examination, 12th November 1924.)

General.—My experience in coal goes back twenty years, and covers Bombay, Marmagao, Madras and Calcutta. I worked under the Port Trusts of the first two of these places, but my experience in coal has been gained chiefly as a coal agent. To a certain extent, I may say, I have made coal my special study.

(To Mr. Banerjee.)—The views that I have given in my written reply are partly my own views and partly based on my recent experience. To some extent I speak on behalf of the Combine,—it is still in existence unfortunately (we cannot get all the coal sold)—I showed my reply to the Chairman of the Combine for approval.

1. **Reduction in cost at pit-head.**—My suggestion as to standardisation was based on the fact that salaries and wages alike are far too high at present. I can quote actual figures from Lakurka Colliery :—

	1913	1924
Raising	6,335 tons.	13,330 tons.
Establishment cost	Rs. 3-4-76	Rs. 2-7-59.

By standardisation I mean reduction also. Some companies pay exorbitant rates to Superintendents (I could quote names but do not like to); others do not and this shows that the rate could be brought down. To-day you will find men on a colliery drawing Rs. 3,000: to my mind that is not a proper wage. Cost of superintendence is too high.

(To Mr. Bray.)—Taking wages as opposed to salaries I do not know whether they could be reduced without a strike. I do know that in 1913 raising actually cost, at one particular colliery, Re. 1-1-3-9 and in 1924 it cost Re. 1-13-1-73. In the past four or five years you have pushed up wages of labour, and the result is labourers only work three days a week—and that keeps them and their family in food and grog. They are drunk from Sunday to Tuesday. This shows that wages are too high. (To Sir R. N. Mukherjee.)—I admit that other people have had increases in wages in recent years— but they can't afford to work for only three days a week. (To Mr. Bray.)—The only way to alter it is to combine, but the managers won't do this, they have allowed labour to get the upper hand. The root of the whole thing was the non-co-operators going up to the coalfields and disturbing labour.

(To Mr. Banerjee.)—I do not know of any attempt in 1922 to standardise wages. As to salaries I say that managers should be paid according to the size of the mine, or according to the amount of coal raised.

(To Mr. Whitworth.)—I agree that some account must also be taken of conditions and that a man running a difficult and dangerous mine should not be on the same basis as one who has an easy and safe mine to work.

(To Mr. Banerjee.)—Some managing agents are paid a fixed sum monthly, others on nett profits. I do not think that the practice of managing agents of other industries affects the question at all, I suppose that it is the same with all of them, their commissions should come down. For Lakurka colliery the managing agents' fees were :—

	A.	P.
1913	2	6'3
1924	1	2'4

The figures for raisings were—

	tons.
1913	6,335
1924	13,330

I am talking of public companies, not of proprietary concerns when I say to cut down management expenses.

2. **Effect of recent increase in wages.**—(To Mr. Banerjee.)—I do not mean that the whole of the Re. 1 increase is due to increase in wages, it is the total increase in raising costs. At Lakurka they were—

in 1913 Rs. 2-7-0'16 and
in 1924 Rs. 3-7-0'16

on an output of 6,335 tons in 1913 and 13,330 in 1924.

3. **Effect of legislation.**—(To Mr. Banerjee.)—If female labour is prohibited, you will probably not get male labour either, so I cannot tell you what effect the prohibition will have on cost per ton.

4 and 5. Savings in stacking charges and wastage.—I do not say that ten annas a ton could actually be saved by abolishing stacking—two annas from avoiding the handling costs and eight annas from prevention of wastage. That is theoretical. The point is, can you in fact load direct? If you can, it should be worth it, the cost of plant is only the first cost and the savings in labour-costs must pay you even when you reckon in the cost of upkeep: but the information can be got from a colliery which has mechanical loading.

(*To Mr. Whitworth.*)—When I put wastage at 10 or 15 per cent. I take into account loss of price for slack and dust in comparison with steam coal. I take the dead loss at 10 or 15 per cent., say for a period of one month. The loss is due to dryage, loss of coal dust and breakage in the dump and pilferage.

6. Improvements in wagon supply.—I am prepared to accept the President's assurance that stations normally are opened at the docks not when a steamer is signalled but five days before the day on which the steamer agents expect her to be ready to load. But I stated the general belief when I said that there is detention of steamers at the docks. If the Port Commissioners can show that it is not so, there is no more to be said. I have heard of definite detentions but I prefer not to mention names, my informants can speak for themselves.

As to stacking at the docks, so far as my own shipment to Bombay was concerned, as there was to be a mixture I wanted the coal stacked so as to be able to mix it at the docks. You cannot mix direct from wagons into a ship, for this you must dump.—I do not think it unreasonable to ask for this, we pay for facilities and the Port should help the Trade. If mixing is not done at the docks, it cannot be done anywhere else. This is the main point, but dumping is also necessary to avoid detention of steamers: many a steamer is hung up through waiting for cargo.

(*To Mr. Bray.*)—Two-thirds would be too much to stack in advance if you were sure of getting wagons, if you were not going to mix your coals.

(*To Mr. Banerjee.*)—Given a proper supply of wagons, stacking has no advantage except to facilitate mixing. As to allowing longer at the collieries for loading, I should explain that there is a rush when half rakes are being loaded; that means bad loading and short loading; and then we had to pay.

(*To Mr. Legge.*)—The time for loading was not enough. It was 10 hours for half rakes. I should rather like that increased. If wagons are put in early in the morning, your labour is there and you can get a fair amount done. I am not aware that 20 hours are allowed if wagons are put in after 7 o'clock. My remarks are based on my experience in the "Katherine Park" case. My written reply refers to actual time of loading in the siding.

(*To Mr. Banerjee.*)—The buyers of loco and other preferential coals, through their command of wagons, can certainly get their coal cheaper than those buying in the open market.

7. Type of wagons.—Using more covered wagons could not preclude the installation of mechanical plant at collieries, because a plant exists capable of loading through shoots into such wagons. It is what we did at Marmagao, we unloaded by means of cranes and tubs—the shoots were on metre gauge lines and ran along so that the mouth of the shoot was in the wagon and the coal was shot into it. Two men trimmed the coal inside.

So too at the docks, if you are going to have plant there for tipping, you will have to deal with covered wagons. But that is for the future.

(*To Mr. Whitworth.*)—One colliery where covered wagons are loaded by a screening plant is Kilburn & Co.'s Jamadoba, I was told so this morning by Mr. Brown of that firm. (*Mr. Whitworth.*)—I think you will find that it is not yet working.)

As to pilfering, I am talking of things as they now are: it is very extensive on the line and at the docks. The more coal is despatched in covered wagons, the less chance of pilfering.

(*To Mr. Banerjee.*)—I lost 100 tons of selected coal which I set aside at the docks to finish loading the "Katherine Park" with. It was all cribbed by the coolies.

(To Mr. Bray.)—The less wagons stand in sidings, the less pilferage there is. Speed up the service and you improve things.

8. Railway freight.—Even if it is against railway principles to give the same rates for short as for long distances, I see no reason why the rate per ton mile to the docks should not be the same as to Bombay: the mileage is there. In 1915 we paid Rs. 3-2-0 to the docks less annas 10-6 rebate; in 1924 we pay Rs. 4-8-6 including terminal charge of annas 8-6, with a Re. 1 rebate. The whole object is to encourage shipment: there is a big margin against us and we want every pie that we can get.

(To Mr. Legge.)—The difference is that we can talk to the railways and docks but it is no use talking to the steamers: the only way to deal with them is to refuse to ship.

(To Mr. Bray.)—To bring back railway freight to pre-war level would about suit our requirements.

It is a very complicated business to obtain a rebate. I have not got mine yet for my March shipments. It is not a question of difficulties in one department only, I started with the Coal Department and have now got on to the Audit.

9. Work of Coal Transportation Officer.—We need him till we are absolutely sure of a steady wagon supply: when the railways guarantee this, then he can be abolished. What is needed is to ensure wagons being there for the man who wants the coal for putting under a boiler, not for the man who is only going to stock for sale later. So I oppose the substitution of any set preferential system. I go to the Coal Transportation Officer with a definite order for 2,000 tons, I should get wagons before another man who has no order. If I was up against another man who has a similar order for 2,000 tons, then we should both go a bit short. That is the very reason for having a Coal Transportation Officer. Before the war we did not raise so much coal as now and yet now there are fewer complaints about wagons. For fifteen years up to 1919 there was a constant cry of wagon shortage, and now you have an officer who is getting more coal moved than ever before. The system is different: 1,800 wagons were said to be the maximum per day; now they handle over 3,000. Why abolish the officer who is responsible for this?

I do not think the railway coal managers could do the work instead of the Coal Transportation Officer. I know how much easier it is to get wagons through him rather than from the two managers—one in Fairlie Place and one Adra.

(To Mr. Legge.)—The improvement is not at the expense of other traffic, the pooling system prevents that. And of course pooling has helped coal. The Coal Transportation Officer's demands for wagons have no doubt kept the pooling officer busy in finding the wagons to meet the former's demands.

I do not believe that there would have been such improvement if the half rake system had not been introduced.

(To Mr. Banerjee.)—I was in Calcutta only for the "Katherine Park" shipment by the Combine, not for the other three. The system worked very simply. I asked the Coal Transportation officer for wagons; I got them and I got them as I wanted them; I had no detentions and I did my mixing. I do not inquire how he arranged this or to whom he gave instructions: what I know is that had I only to go to him and he made the arrangements. Even if a perpetual supply of wagons were given and 2/3rds of the coal were dumped beforehand, still I should like to keep the Coal Transportation Officer.

10. Port charges.—We should take our chance of freights being put up if the river dues were shifted on to the steamers. As it is, they are a steady burden on coal: if they are on the steamer, there is a sporting chance of our not having to pay the whole of it. Wharfage we should pay because that is for handling coal: a steamer uses the wharf or the dock and should pay for it—that is done in Bombay.

As to dumping, if the Port Commissioners pay for this 2-6 annas in cooly charges, they ought to reduce them. In Bombay the Port Trust abolished the

contract system for labour eight years ago and it paid hands down: it ought to be the same here.

11. Improvements in handling wagons and results on costs.—The bottle neck to which I refer is at the entrance to the docks: there is a series of sidings outside and another series inside the docks: the bottle neck joins them.

12. Loading and shipping facilities.—I do not think that equipping the docks with two-ton cranes would cost anything like Rs. 96 lakhs. There were such steam-cranes at Marmagoa on the quay-wall: Of course there is no quay-wall at the Kidderpore coal dock: the Engineers can say how much it would cost to make one or strengthen the present staging. If the cranes were used, they could load efficiently only from one line of wagons. I know that at present loading goes on, by coolies, from four lines of wagons: one line, however, with the turn tables to get the empties out would do as well. The cost of working the cranes would be paid by shipping: they would try to pass the charge on to the shippers but they might not be able to: for instance at Marmagoa the cranes cost steamers Rs. 7-8 per day each. Each crane did 250 tons per day so that it works out under $\frac{1}{2}$ anna per ton. That was in 1914: there may have been increases since.

I should prefer the 2-ton cranes, with long jibs, to the Beckett plant: they would be cheaper. The latter is not properly used: they always let the coal drop above the hatchway: I was on a ship astern of one loading at the Beckett plant and I saw myself that they failed every time to lower the tub properly before releasing the trap-door.

(*Mr. W. C. Banerjee.*—The Federation representatives noticed that the ropes were not long enough to reach the bottom of the hold.) (*To Mr. Banerjee.*)—Of course loading by basket and dropping the coal 40 feet smashes it. In Madras they unload by cranes on the wharf into wagons. In Bombay the handling is destructive: they shoot coal into a boat and then land it by hand.

(*To Mr. Legge.*)—The fact that Beckett plant and cooly-loading alike damage the coal does not make the tipping of wagons impracticable: if shoots are provided to prevent the coal dropping too far it would meet the difficulty.

13. Storage and stacking at docks.—I am not sure that rent is charged after ten days for every 3 days or part of 3 days: I had not the Calcutta rule by me and quoted the Bombay rule. (Told that now after 10 days rent is charged at the rate of 1 anna a month or part of a month). If you are going to allow cheap dumping you will have to prevent people using the dock as a godown.

(*To Mr. W. C. Banerjee.*)—I think the provision of bins in which to stack coal would be ideal: plans for a bin were put up to the Port Commissioners some time ago. I have handed these plans to the President.

As to fires, I suspected it to be due to some Burangya coal from the Raniganj series; not the coal itself was at fault but the method of loading in vogue. When you load, the coal piles up in a pyramid beneath the hatch, slack and dust in the middle and the big coal at the sides. When the time comes for trimming, the workmen shovel the slack and dust to the sides and leave the lumps in the centre. I prophesied where the fire would be found to be situated and it turned out to be there. The side of the ship heats up in harbour and spontaneous combustion is the result: big coal has less chance of firing. The coals that went to Bombay ought not to have fired.

(*To Mr. Whitworth.*)—The trouble was due to carelessness at the collieries, insufficient picking and too much slack. Stacking at the docks would not make slack worse because I propose grading for size: moderate sized lumps suffer less from friction and don't break so much if dropped: my experience shows that loading sized coal-free from slack produced only $\frac{1}{2}$ per cent. slack, on a 6,000 ton consignment even. The need for stacking would tell against mechanical plant, but, if a bin were put in, it would be much cheaper than the cranes: a company might build the bin, paying rent: or the Port Commissioners might build it: a few years would pay off the whole cost.

17. Steamer freight.—It is cheaper to send coal by sea instead of by rail to Bombay if steamer freight is Rs. 8 or less. It is less now, Rs. 7; it would

pay to send it by sea now rather than by rail; but we cannot sell it in Bombay as soon as African coal, due to price, in spite of reducing below cost price.

18. Comparative merits.—First class Indian coal is as good as St. George's, absolutely. The piece of St. George's which I produce may be compared with 1st class Jharia. It was picked up from a Bombay stack. This specimen of Witbank similarly is like our Barakar coal. At this moment I cannot give you separately the prices of the first class and second class coals which we mixed for Bombay. It is not a fact that there was a margin of Rs. 2-8, on the price of South African coal, in favour of Bengal coal: their price of Rs. 26-8 c.i.f. (equivalent to Rs. 29-8 mill delivery) was before our shipment reached Bombay: when we came into the market they dropped their price to Rs. 19-8 c.i.f. (equivalent to Rs. 24 mill delivery) for St. Georges: we had to come down to Rs. 23 mill delivery.

As regards the difference between the South African and the Indian ton, they make no distinction in Bombay: they sell any coal at 2,000 lbs. to the ton and hang on to the difference: we get no benefit from shipping long tons.

These figures show what an advantage South Africa has over us :—

	Indian coal.	African coal.
	Rs. A. P.	Rs. A. P.
Pit-head price	6 0 0	5 0 6
Railway freight	4 8 6	5 0 5
Handling	1 0 0	1 1 0
Steamer freight	7 0 0	6 12 0
	<hr/>	<hr/>
	18 8 6	17 14 0

I am not including loss in weight, insurance, etc. We get Re. 1 rebate: they get Rs. 7 rebate. (*President.*—The South African rebate is six shillings and seven pence: that amounts to about Rs. 4-11 a ton on present exchange. Your figure, Rs. 7, appears to be wrong) I am working on figures of 1910. (*Mr. Bray.* You seem to be taking account of the rebate on the South African railway freight twice: the South African railways do not carry coal for nothing.) I have quoted the latest figures which I could get: it is possible that they are wrong. (*Mr. Bell.*—South African freight to-day is thirteen shillings and six pence, i.e., Rs. 9 per ton.) That makes a difference, but it might be the other way. (*President.*—In 1910 when South African coal sold at £1-10-10 in Bombay it got a rebate of between Rs. 4-1 and Rs. 4-4, only a few annas less than now, and yet imports were only 18,000 tons.) The reason why more did not come in was that Indian coal held the market: people were satisfied, and did not experiment with other coals. Owing to Government putting on the embargo, Indian coal lost the market: now people are used to South African coal.

St. Georges' is now selling at Rs. 19-8 c.i.f. and Witbank at Rs. 17-8. Bombay wants us to sell our mixture which cost us Rs. 22-8 c.i.f. at Rs. 18 ex-depot: the people who shipped it will not get their full value.

(*To Mr. Legge.*)—Out of Rs. 3 for transport at Bombay annas 6 is for weighing and the balance for lorry, loading, unloading and stacking—that is not excessive for the distance travelled.

(*To Mr. Bray.*)—The analysis for Witbank is that given to me in Bombay: really its ash content goes up to 22 per cent., nearly as bad as Jharia 10 seam. Under present conditions, at present prices, Indian coal cannot compete at Bombay. Northern and St. Georges' are better than anything that we have sent: Witbank we can beat with our 10 seam Jharia.

(*To Mr. Bell.*)—As regards a comparison between the costs at South African collieries and at ours, I can only refer to "Fuel and Refractory Materials" by A. Humboldt Sexton, p. 82, table XXXI. (*Mr. Bray.*—On the average given the increase since 1920 has been for South Africa coal annas 11 only as against Rs. 9-7 for Indian.)

19. **C.i.f. prices of Indian Coals.**—(To Mr. Banerjee.)—I didn't calculate loss of weight on any percentage: 9 annas is roughly what the loss amounted to on actuals; one ship was 600 tons short, another 150.

21. **Grading of coal.**—The questionnaire confuses classification and sizing by using the word "grading." Classification is essential. A man now buys at a colliery coal of a particular seam: what guarantee has he that he gets it? Take the analysis of particular seams: I refer to page 67 of Mr. Andrew's book on fuel. Seam 14 Jharia has two distinct grades of coal in it, one giving 13,161 and the other 11,865 B. T. units. Seam 12 similarly has two grades, giving 12,069 and 12,726 B. T. units. Which coal do I get when I buy by the seam? Or taking a colliery working 10, 11 and 12 seam: they sell me No. 12, how do I know that they have not mixed all three seams? I want some reason to justify my refusing to take delivery. I have no faith in buying Disherghar Quality or Admiralty Standard. You may at Jharia 10 seam as Disherghar Quality. To me they do not guarantee any classification.

I would not buy on certificate of analysis exactly, but on the basis described in my written reply—by colliery, carbon, and ash. Carbon here is not fixed carbon but fixed carbon plus volatiles. I can check it by sending a man up to the colliery to take a sample out of each wagon (half and half with the colliery people), and I can take or refuse delivery on that. No outside authority is needed. It is different when I am exporting: then check would be at the docks—by sampling each wagon which arrives there.

I have here 20 certificates of analyses of coal shipped by the "Katharine Park." Mr. Briggs of R. V. Briggs & Co., an independent firm, went down to the docks and took samples: he had nothing to do with either buyer or seller. He gave separate certificates for each colliery. I went to Bombay and shewed there to the Bombay people: they had absolutely no effect. If you ask why, it was because I refused to do as the middlemen do.

(To Mr. Banerjee.)—I say that you can sell coal on analysis. If the buyer can send his man to sample manganese ore, why not for coal? They analyse the manganese which arrives in England. I bought Ponati bottom seam, and on analysis I found on the analysis certificate that I had been given top-seam instead. You emphatically do not have to take a sample down the whole face of the seam for this purpose: that would be no check on the seller: you want an analysis of the actual stuff despatched.

(To Mr. Whitworth.)—Mechanical plant is not needed for sizing. Hand labour costs 8 annas per ton: women and children do it, sizing the coal as it comes up. I can quote a case of a large buyer relying on analysis—the Electric Corporation Bombay: they may have other information as well.

32. **Practicability of pooling and its effects.**—(To Mr. Banerjee.)—Bombay prefers to buy through middlemen because of *baksheesh*.

(To Sir R. N. Mookerjee.)—The combine was a temporary combine, meant to become permanent later if all went well. It is still in existence because all the coal shipped is not yet sold. Twenty-five collieries were in it.

Sizing and classification would help in competing in Bombay. The coal so treated was thought well of, but the price was too high. The combine didn't size: it is difficult to get enough collieries together to size enough for a shipment: if we could do so it would help very much. The sized coal sent to Bombay went by rail—five half-rakes of it sold there.

Messrs. ANDREW YULE & Co., Ltd., Calcutta.

WRITTEN STATEMENT.

A. Possibility of economies on the coalfields.

1. **Reduction in cost at pit-head.**—We are of opinion that the cost per ton at pit's mouth can only be reduced at the expense of the safety and efficiency

of the mines unless the present output can be increased. In one district in the coalfields we have decided to reduce the number of working days per week in order to endeavour to secure a full muster, for few of the miners work more than four days weekly. Working 7 days per week with short mining staff necessitates the maintenance of a complete general staff above ground as well as below. We anticipate in this way by lower overhead costs to reduce somewhat the total cost per ton. A regular wagon supply would help considerably. In some districts we receive supplies twice weekly and have to find employment for loading labour on other working days. If a regular supply of wagons was available, half the loading staff would be sufficient, but with an irregular supply a large number has to be kept to prevent demurrage and bad loading. Also as we are never sure of the type of wagon which may be supplied, it is necessary to keep extra labour. Covered wagons require to be head loaded, but open wagons can be loaded from mechanical screens. If the open type wagons were standardized especially for those collieries with mechanical loading appliances considerable economy would be effected.

2. Effect of recent increases in wages.—The cost per ton was increased by between 22 per cent. and 30 per cent. by increased wages paid to labour. The miner has been content to draw his original pay by working less hours per week. He has not tried to increase his output. The result to the colliery has been that the reduced output increased raising costs a further 25 per cent. making a total increase of approximately 50 per cent., directly due to increased wages.

3. Effect of legislation.—Legislation has increased costs by four annas per ton chiefly because of (1) reduction in number of working hours per week which entails employment of three men instead of two especially among Engine and pump Khalassies, (2) Workmen's Compensation Act (1½ annas direct), New Mines Act, Electrical rules, Mines Board of Health (Sanitation, etc.), Water Board, Steel Protection, Trades Unions, etc. All these have added to costs but in a lesser degree. We think it is opportune to mention that the proposed bill to prohibit women workers in mines will again increase costs by 8 annas per ton. 50 per cent. to 60 per cent. of the mining labour in the lower or Raniganj field is female.

4. Possible savings in stacking charges.—The increase in cost per ton loading into wagons due to stacking instead of direct loading, is five annas per ton made up as follows:—

	Annas.
Laying of lines over coal stack	·25
Extra Trolleyman	·75
Hand Screening	·50
Carrying to and from screens to wagons	2·50
Loss in output due to delay in return of tubs, plus khoraki for new labour	1·00
TOTAL	5·00

5. Wastage from stacking.—The wastage as a result of stacking may be classified as follows:—

- (a) Breakage of coal when tipped on to the ground from the banking level.
- (b) Disintegration of stocks due to weathering.
- (c) Spontaneous combustion.
- (d) Pilfering.

(a) **Breakage.**—A considerable loss of round coal results from stacking. We have found that when fresh raisings are loaded directly over the screens, the proportion is 2/3rds steam coal, 1/3rd rubble and dust. But loading from stocks which have been a few weeks on the ground gives at most a proportion of 50 per cent. steam coal, thus showing a loss of approximately 16 per cent.

steam coal. This figure of course varies according to the friability of the coal and the height it is tipped. The greater the length of time that coal is kept in stock the greater is the proportion of rubble and dust to steam coal. This represents a serious loss of coal suitable for Locomotive and Bunkering purposes. The financial loss is gauged by the difference in price as between small coals and steam coal, and the additional cost of packing, screening, and loading by hand.

(b) **Disintegration of stocks due to weathering.**—The Dishergarh seam (as in the case of all friable coals) disintegrates rapidly on exposure particularly if stacked for any length of time towards the end of the rainy season. Due to this weathering action a considerable loss in calorific value must take place thus affecting the quality of the coal to the consumer.

(c) **Spontaneous Combustion.**—Entire stocks may be lost if a careful watch is not kept and the various means adopted to prevent fire breaking out. This may occur at any season of the year.

(d) **Pilfering.**—Despite the appointment of Chowkidars and others to prevent small thefts of coal a great deal of pilfering from stocks goes on throughout the coalfields. This loss is estimated at varying amounts probably about 2 per cent.

B. Possibility of economies in transport to Calcutta.

6. (a) **Improvements in wagon supply.**—We have drawn attention in our reply to question No. 1 to the economy in surface labour if collieries received wagon supplies as per indent instead of the existing haphazard methods, and as explained in No. 5 the cost of stacking and resultant losses would be eliminated. Further as loading labour for a rake of wagons is not always available and Managers have to solicit help from a neighbouring colliery, the labourers readily recognize their strong position and ask for extortionate wages which are often granted to save demurrage. Such practices increase the difficulties of the colliery Manager, in fact, he spends unwillingly on the surface much time which would be most valuable underground. Open wagons should be supplied to collieries with mechanical loading appliances.

(b) **Their influence on costs.**—We consider if in conjunction with our reply to No. 7 such improvements were adopted we would be able to reduce the pit's mouth price of coal by *one rupee per ton*. Only open type wagons are suitable for loading, transporting and unloading coal expeditiously. The covered type in use can only be loaded and unloaded by hand.

7. **Type of wagons.**—We advocate a standard wagon to carry 20 tons without marks or load lines (the difference in specific gravity of Jharia and Raniganj coals is negligible) but to be loaded flush with ends and sides. The sides should have wide central doors opening outwards. We would draw the attention of the Committee to the fact that, owing to the different types of wagons now supplied, 80 per cent. of the mechanical screening and grading plants erected at great cost and equal to any modern plant in the world are only partly operative.

8. **Railway freight.**—If the present efforts to recapture foreign markets are to have any hope of success, railways must reduce the freight per ton from fields to Howrah and Docks (for bunkers and export) if possible to pre-war rates. The increase in traffic will, we believe, compensate them eventually for any temporary loss during the initiation period.

9. **Work of Coal Transportation Officer.**—We concur with the views of the Indian Mining Association in their reply to this question but would add that although superficially it might appear as if there is an insufficient wagon supply, in our opinion the root of the trouble is not in the number of wagons but in delays in handling and transit *plus* the unsuitable type of wagons supplied.

10. **Port charges.**—The Port charges are at present high, being roughly Re. 1-3 including dumping charges as against As. 10-6 before the war. These charges should be brought down to pre-war level. This would facilitate re-

sumption of export business and the increase in coal handling would, we think, neutralize the loss to the Port Commissioners by such reduction.

11. Improvements in handling wagons and results on costs.—The whole loading arrangements for export coal are unsatisfactory. At the present time the loading plant, in Durban, for instance, enables the wagons to be tipped direct into the vessel's hold and enables a steamer of, say, 7,000 tons to be loaded in two or three days, whereas our experience has been that a similar vessel in Calcutta takes a full week. This difference has an adverse effect on the freights charged by steamers, and vessels much prefer a relatively lower freight from Durban.

12. Loading and shipping facilities.—The loading arrangements at the Kidderpore Docks are undoubtedly a long way behind those in most of the other large coal handling ports of the world.

Before the war it was the custom to dump coal on the quay for several days before the arrival of the coal loading vessel. At the present time however in order to avoid this handling charge, coal is left in the trucks for the maximum possible time without incurring demurrage, so that direct shipment from the wagons to the vessel will be effected.

In order, however, to have satisfactory loading under present conditions a better system of labour should be arranged. At the present time we believe that if all the coal berths were occupied the present labour force could not handle more than 500 tons per day average and for a vessel of 7,000 tons this would mean 14 days' loading.

13. Storage and stacking at docks.—At the present time there are two berths equipped for loading bulk cargo. Preference appears to be given to vessels loading Manganese. We consider that preference should be given to coal.

14, 15 and 16. Bunker coal.—Facilities for bunker coal at Shalimar and Howrah are sufficient but depot rents are excessive having been increased without warning by 1,200 per cent. in October 1922. We give below some examples of increases.

Rs. 302 increased to Rs. 4,259.

Rs. 318 increased to Rs. 3,963.

620

8,222.

We consider the increase in rent by the Railway Company was quite unwarranted and an abuse of the strong position which they were in.

Having developed the Howrah depot they had coal handlers in their power and the latter had no means of resisting the exorbitant increase that the Railway demanded.

Since 1914 there has been an increase including coal freight and all charges of about Rs. 3 per ton which amount to 43 per cent. of the total charges for carrying coal to the depots: beyond that there has been an increase of 40 per cent. in railway freight, 50 per cent. in river dues and 50 to 100 per cent. in contractors' rates. The actual labour charges of bunkering and trimming have been practically doubled.

D. Steamer freights.

17. Steamer freights.—We do not consider that steamer freights as they stand to-day are excessive. They barely cover costs at present rates and the only means at present of securing a reduction is by providing better facilities at the docks and on the railways which will save the vessels' loading time. Such combination will be productive of larger exports and thus we consider in the long run the public utility companies concerned will not suffer loss.

E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—Neither Natal, Ombilin, or Sumatra coal is as good as the best Bengal coal, such as Dishergarh or Seebpore.

These latter coals, however, require rather unusual handling in the stoke-holds of steamers, and it is probable that these having been excluded from the export business for some time, the firemen are not used to dealing with them and for this reason it is very probable that Bengal coal is not receiving justice at the present time.

At the present time for the above reason and owing to good propaganda on the part of those interested in South African coal, Bengal coal stands considerably below its proper value at out-ports. Given an opportunity to re-establish itself we think that Bengal coal will not only capture all the trade of India, but also Colombo, Singapore, Sabang, Straits Settlements and the Red Sea ports.

19. **C.i.f. prices of Indian coal at different ports.**—This question is subject to fluctuation of exchange and steamer freights, but on present sea freight and with coal at Rs. 8 pits mouth, c.i.f. prices would be approximately as follows:—

Madras .	Rs. 18 4.	Colombo .	Rs. 18.	Bomlay .	Rs. 20-8.
Karachi .	Rs. 20-8.	Rangoon .	Rs. 18-4.	Singapore .	Rs. 17-10.
Penang .	Rs. 17-10.				

20. **Prices.**—The level of prices at competing ports varies monthly due to fluctuation in exchange and steamer freights. Prices range between Rs. 28 and Rs. 30 c.i.f. which at 1s. 6d. exchange equals about Rs. 19-5 c.i.f. Bombay.

21. **How competition can be met.**—(1) Rail freights, docking, storing and other charges should be reduced for Calcutta.

(2) A bounty should be given on export coal equal to the bounty given on Natal coal, or a duty to equalize same should be put on foreign coal imported into India.

Only the best Indian coal should be shipped and standard quality should be kept uniform. After a period the bounty could be dispensed with.

22. **Possibility of new overseas markets.**—It is essential for Indian coal to regain Colombo, Straits Settlements, Sabang, Aden, Red Sea and West coast of India ports first.

If the measures suggested in No. 21 be followed, we do not think there will be any need for further steps.

23. **Special assistance to other coals competing with Indian.**—We understand that a bounty was granted to Natal coal for export amounting in all to 6s. 7d. a ton and this we understand is still in force.

F. Grading, inspection and certification of coal.

24 to 30. We consider that if any general system of grading be adopted, it will in the long run tend to lower the reputation of Indian coal. Business in Indian coal must be dependent on the reputation of the firms conducting the business. If any general system of grading be adopted, there will be no individual responsibility. Shippers will be delivering their coal under cover of the standard grades arranged and there will be no individual responsibility to maintain these grades. Consequently the tendency will be for shippers to deliver as poor coal as they can get passed by the inspecting authority and it is impossible to have every cargo efficiently and thoroughly inspected by such central authority. We consider the establishment and maintenance of an export business must depend on the reputation of the firms developing and handling it.

31. **Sale on analysis.**—We are of opinion that to export coal on a guarantee of quality and calorific value as determined by analysis is not possible.

G. Pooling of coal.

32 and 33. **Practicability of pooling.**—(a) and (b) No. We do not consider pooling to be practicable.

34. **Compulsory pooling.**—This is emphatically neither practicable nor desirable.

**E. J. JUDAH, Esq., Manager, Coal Sales Department, Messrs.
Andrew Yule & Co., Calcutta ; P. S. KEELAN, Esq., Chief
Mining Engineer and Superintendent, No. 1 Circle,
Messrs. Andrew Yule & Co. ; and J. B.
WARDLAW, Esq., Agent, Bengal
Coal Company, Dishergarh
Group.**

(Oral examination—January the 16th, 1925.)

General.—*Mr. Judah.*—I have been 20 years on the commercial side of the coal trade. I have never done any practical mining.

Mr. Keelan.—I have been 31 years in coal.

Mr. Wardlaw.—I have been 17 years in coal in India and 9 at home.

Mr. Judah.—We are appearing more or less as independent witnesses on account of our firm and not on behalf of the Indian Mining Association. We have approximately 24 collieries and you may put their output at 100,000 tons per month in round figures.

Mr. Keelan.—The collieries under my management are all in the Raniganj field.

Mr. Judah.—The bulk of our collieries are on the Raniganj field but others are on the Jharria side. I think it is correct to say that my firm had had more experience of export in ordinary times pre-war than any other firm in Calcutta.

Surplus for export.—*Mr. Judah.*—At present there is a surplus of coal being raised in India and apparently the internal market cannot by itself absorb it. An effort to recover the export trade is not only worth while but essential. When I say that there is a surplus which it is essential to export, it is after paying full regard to the needs of India. This surplus is in part due to the output by State-owned collieries and it will be more pronounced when the Bokaro-Ramgarh field is opened up.

South African competition.—*Mr. Judah.*—If I am asked how it is that South Africa manages to sell at so low a price I should ascribe this to the large output in individual mines. The result of this is that their standing charges are comparatively low. All their collieries run very big and some of them raise as much as 1,000 tons a day: that would be a very unusual figure for an Indian colliery. In India we have a larger number of collieries raising smaller quantities and this naturally affects the cost prejudicially.

Mr. Keelan.—(To Mr. Bray.)—The larger output quoted for South African collieries will reduce their expenditure per ton under overhead charges.

Mr. Judah.—You may take raising cost for the Bengal Coal Company at Rs. 5-7-10 per ton: that is our average for the last half-year. The selling cost of Dishergarh coal is about Rs. 9 or less: there is a margin for reduction if necessary. We are in fact prepared to reduce our price in order to capture overseas market and have already made a serious effort in that direction offering coal at cost price. (To Mr. Stuart-Williams.)—One market in which we did this was Singapore. There was no result. We have now made offers to the Bombay Port Trust at practically cost prices which give for

Dishergarh a small margin of profit and for ordinary first class coal none at all. The price at which we offered the latter was Rs. 18-4-0 c.i.f.; the price for Dishergarh was slightly higher.

The reason why these attempts of ours have had no result, I should say, was prejudice. When we went out of the market South African coal came in: the firemen have got used to using South African coal and we shall have to get them educated to use Indian coal again properly. But it is not all firemen who know how to use Indian coal economically: where you have Indian firemen you have no complaints about the Indian coal but where there are European firemen—well they do not know how to handle it. The outside competitor has a hold on foreign markets and it will be difficult for us to get him out.

The remedy which I would suggest would be a bounty and a reduction in railway freight, both of them combined: they would help us to reduce our rates still further. The only reduction which I can suggest at pit-head is from a saving in stacking charges.

A. Possibility of economies on the coalfields.

1. Reduction in cost at pit-head.—*Mr. Keelan.*—(To *Mr. Legge.*)—By regular wagon supply in our reply to this question we mean a supply full on indent of standardised open wagons all the year round as suggested by you. Of course that would be the ideal solution of most of our difficulties: there are other troubles besides which would not be remedied by a good wagon supply.

Cost of raising.—*Mr. Judah.*—Our 1912-13 figure for raising cost would be between Rs. 2 and Rs. 2-4-0. The increase since then of about Rs. 3 I should ascribe to—

- (1) Wages,
- (2) Different and more difficult working,
- (3) Cost of stores which are still higher than in pre-war time though lower than a couple of years ago.

The figure of Rs. 5-7-10 for the Bengal Coal Company coal includes royalty: this is low for most of the Bengal Coal Company's pits as compared with the present rates of royalty. (To *Mr. Bell.*)—The difference would be pronounced: nowadays the royalty on good coal is about eight annas, with us it is mostly two or four annas.

Rs. 5-7-10 is a round figure for the whole of the Bengal Coal Company's pits. It includes mining and Calcutta cost but not depreciation, which is taken off the block. We have no sinking fund: if you insist that the accounts ought to include provision for sinking fund I could only say you would have to add a certain proportion to the figure given for costs.

(To *Mr. Banerjee.*)—Particular collieries have their own particular cost. For example, Bhatdee in some months would show a figure considerably above that which I have quoted. (To *Mr. Bray.*)—The figure is a six-monthly figure but there is not much difference between the two halves of the year: it might roughly be from four to six annas. (To *Mr. Bell.*)—Every colliery would have different costs but I look on this figure which I have quoted as likely to be more useful to the Committee because it covers a number of collieries and gives a general idea. It does not include any Jharia mine: the Bengal Coal Company has one on that field but it works a coal which is comparable to Raniganj. We have 14 or 15 collieries working different seams on the Raniganj field. In Jharia costs run a bit lower; perhaps anything between annas eight and rupee one: you might put them at Rs. 4-8-0 to Rs. 5 for Jharia. These figures would cover Calcutta charges but not depreciation. The figure for depreciation which is allowed by Government is say 7 to 10 per cent. If I had to say how much of Rs. 5-7-10 per ton would go in depreciation, I should say about twelve annas. But my figure does not only cover Dishergarh coal at Rs. 9: much of it is Raniganj and lower grade coal, like that from the Kajora seam, for which the latest prices are

Rs. 6 to Rs. 6-8-0. It does not cost us so much to raise inferior coal because the collieries are worked at shallower depths. They are smaller collieries with no power equipment and run a bit cheaper. Rs. 5-7-10 is a fair cost for raising the class of coal that must be exported if we are to cover the market. Including depreciation the cost would be roughly Rs. 6 to Rs. 6-8-0. We have offered coal at Rs. 6-8-0 per ton in the hope of gaining the overseas market. There is a margin of Rs. 2-8-0 between charges and the usual selling price but not in all cases. We should accept less than Rs. 9 per ton for substantial business.

2. Effect of recent increases in wages.—Mr. Keelan.—I certainly do not advocate any reduction of wages. Personally I do not think that the Indian miner is overpaid. We are now paying a wage which can attract labour to the mines whereas previously we did not. The allegation is that the miner nowadays, in return for higher wages, merely works a fewer number of days but my experience is that we always used to hear the same complaint whenever crops were good. Whatever the wages paid the attendance of the Indian miner falls off when the crops are good. Since wages were increased it has happened that there has been a succession of good crops.

There has been an increase in the total output of Indian coal but that is largely due to the working of the State Railway collieries and there has been a large increase in the total number of collieries.

(*To Mr. Legge.*)—It is owing to his good crops and not to his increased wages that the labourer has not been working so hard. We used to complain that he was only working 3 days a week even when he was being paid half the present rates. (*To Mr. Whitworth.*)—We cannot reduce the wages below what we are giving to-day. As regards the coal-cutter's wages we are certainly not paying too much and it would be dangerous to try and reduce them. We are now attracting a certain class of labour which we did not attract before and what I say is, let it come. If you reduce the wages it will put back your labour supply and reduce your output.

(*To Mr. Bell.*)—At the end of the week the miner is better off so far as money goes than he was before. His work depends on the harvest. In a good year he does not work to get money to put by because if necessary he can always come back to the colliery and earn a little more. In a bad year however he always works hard. The increase of wages has been a good thing for the miner. The standard of comfort has gone up. He is better clothed than before, he eats better and he is spending money on weddings and feasts. Certainly I regard this as doing him good. If he can work only four days in seven, he is better off and lives more comfortably, not having to eke out an existence with difficulty. There is no deterioration observable in the miner at present. (*To Mr. Legge.*)—I do not think that miners are spending more on drink. The man who is drinking now would be drinking under any circumstances.

Mr. Keelan.—I do not consider that the machine cutting labour is being paid too highly.

Mr. Wardlaw.—I find that machine cut coal costs more than coal cut by hand. We are paying the same rate per tub for cutting and there is the additional cost of explosives, machine charges and power. The reduction which we have made on loading charges works out at only one and a half annas a ton while the cost of the explosives alone works out to six annas. We use machines however because the increased output brings down overhead charges.

Mr. Keelan.—It must be remembered that you have your labour specialising for different classes of mining. In deep mines the percentage of labour from outside the province is very small and we depend on local labourers who have been with us for years. We pay seven annas a tub for loading machine cut coal in my district. The rate has come down a little but there is no chance of making any appreciable reduction immediately. The result will only be to stop the machines working. It must be remembered that machines are a recent introduction and we must pay higher in order to accustom labour to them.

2. 3 and 4. **Cost of increase in wages, legislation and stacking.**—*Mr. Keelan.*—(To *Sir Rajendra Nath Mookerjee.*)—The percentage of increase due to wages, legislation and stacking might be put at 22 per cent., 6 per cent. and 10 per cent.: that gives a total increase of 38 per cent. but this might in some cases rise to as much as 48 per cent. The equivalent of the 48 per cent. increase may be taken as Re. 1.10-0 per ton. In my view no reduction is possible on the first and second of these items. It is beyond our power to reduce the expenditure imposed on us by legislation, but we have no fault to find with it. As to excessive expenditure due to stacking the suggested remedy is to give the correct type of wagon and regular despatches. This would give an all-over decrease in cost which would be helped by the extension of mechanical loading. From my thirty years' experience I would say that some (not all) of our difficulties would be eliminated by a better wagon supply. As to detailed suggestions for improvements in wagon supply it is difficult to comment on the working of the railways of which I have no inside knowledge. We want a regular supply, but it is not our business to suggest the details.

3. **Effect of legislation.**—*Mr. Keelan.*—(To *Mr. W. C. Banerjee.*)—As regards prohibition of female labour, out of evil may come good, and according to one view the result might be an improved labour supply. The miner might bring in a man to do his loading, the latter seeing that better wages can be earned by coal cutting might take to that branch of work, and the result might be that we would automatically get a system of labour recruitment. The other view is that most labouring classes in India look upon the wife as an asset. On this view if the wife of the miner is not allowed to earn wages in a coal mine, he will go off to field work or if the miner by himself can earn 12 annas in the mine while he and his wife combined can earn Re. 1 on the surface, then he will not stick to the mine but only do surface work. It is quite likely that by prohibiting female labour you would drive away the aboriginal labourer, the Bauri and the Santhal, which is the cheapest and the most easily managed. (To *Mr. Whitworth.*)—The view that female labour might be easily replaced is open to some doubt. My Company, for example, has made many attempts to tap new sources of labour. As many as twenty years ago they tried to get labourers in from Orissa and they even paid them 7 annas a day while they were learning the work: eventually when the Company ceased paying this 7 annas the labourers went back to Orissa. It is the old story that mining does not appeal and that the Indian miner is an agriculturist: there is no real miner in India, he is always something else and merely cuts coal in his spare time. There are, however, a few individuals who seem to be coming to regard mining as their sole occupation, and there will be more in time. To attempt to prophesy the results of legislation only means making a guess. I have stated the two possible views and nobody can tell definitely which of them is right. (To *Mr. Bell.*)—In my view it is rather more likely that you would drive the men to the fields or to earthwork if you prohibit female labour.

4. **Possible savings in stacking charges.**—*Mr. Judah.*—If we could avoid stacking altogether we would save in the first place 5 annas a ton on labour. Then when stacks are large there comes in depreciation, deterioration (say another 5 annas) and on top of that disintegration, spontaneous combustion and theft working up to a loss of say Re. 1.4-0 on actual coal stacked.

Mr. Keelan.—Ordinarily we stack 20 per cent. or 30 per cent. of our output, but at present it would be nearly 60 per cent. owing to the absence of orders. When orders were plentiful we had up to last August, owing to insufficient wagon supply, to dump upwards of 90 per cent. I think that 20 per cent. would be much too low a figure for the normal amount stacked. If we could be certain of a full wagon supply we should not have to stack more than 20 per cent.: that would be the right figure under such circumstances, so taking the basis of a full wagon supply we could save only 20 per cent. on stacking. Last year up to August conditions were very bad and during the shortage of wagons I dumped 90 per cent. If this could be avoided there would be a saving of between 10 annas and Re. 1.2 0 on the whole output,

including avoidance of handling costs and loss in output owing to appliances which are designed to deal with an ordinary amount of coal being inadequate for handling 20,000 tons on the surface. To handle the same amount of coal with mechanical appliances means increased capital expenditure and it does not pay to put in mechanical appliances to deal with larger amounts on the surface than ought to be there. During the whole year in 1928 the proportion dumped was 50 per cent.: if this had been avoided there would have been a saving of from 5 annas to 10 annas on the whole output.

Mr. Keelan.—(To *Mr. Whitworth*.)—As regards the estimate of 10 annas loss on the whole output, 5 annas would represent the actual cost of labour involved.

Mr. Wardlaw.—The remaining 8 annas represent the difference in selling price between steam coal and rubble or dust.

Mr. Judah.—When we sold steam coal at Rs. 10, slack fetched only Rs. 6-8-0 to Rs. 7.

Mr. Keelan.—(To *Mr. Bray*.)—Under better circumstances of wagon supply some portion, but not a considerable portion, of our output would go into stack in February when raisings are large as compared with November. It depends on the orders that we have for coal. Most colliery agents know hot raisings are going and arrange orders accordingly. (To *Mr. Stuart Williams*.) My experience is that when supplies of wagons are regular there is little stacking because the Managing Agents arrange their orders accordingly. If, for example, we got a railway order for 30 thousand tons a month, we would be able to supply it regularly each month without having to lay in any stocks in any particular month.

5. Wastage from stacking.—*Mr. Judah* (To *Mr. Legge*.)—As regards pilfering from stacks I should put it at 2 per cent. on results taken over a group of collieries.

Mr. Wardlaw (To *Mr. Banerjee*.)—It is easy to avoid shale with a mechanical loading plant because it is taken out on the picking belts. Dishergarh coal, however, requires very little picking and it can be done by coolies in the wagons: for this reason we do not have any belts on our plant for Dishergarh or Sanctoria coal. Some mechanical loading-plant costs as much as Rs. 60,000. It is certainly possible in present conditions to fit up loading-plant in every colliery but it is a question of how you can bring it into use if you do not get a regular supply of suitable wagons. A screening plant designed to handle an output of three thousand tons a month would pay for itself in the first year by eliminating loading charges and by proper sizing of coal. You only need one coolie for a mechanical loading plant, i.e., a man to manage the engine. The actual cost of up-keep of such a plant is nothing but the cost of power to drive it. For a machine loading 500 tons a day the actual cost per ton for the units used is Rs. 3 per hour: taking ten hours' work that means Rs. 30. On the other hand loading 500 tons by hand costs 10 pies a ton to which you will have to add screening which might cost up to 8 annas a ton. For a colliery raising three thousand tons a month you could put up a simpler plant which would do the work. Prices vary according to the operating methods. The price which I quoted was for a very up-to-date plant. I estimate that even in a small colliery 8-annas a ton might be saved by putting in screening-plant provided always that you get the necessary wagons. (To *Mr. Bray*.) Power costs one anna a ton. The other charges you have anyhow even if you are loading by hand. For loading mechanically the total charge is only 1½ annas as against 2½ annas by hand for actual loading and say 8 annas for screening charges.

Mr. Wardlaw.—Coal and slack are not raised separately in our collieries. In the Dishergarh seam we never raise the slack separately: we leave no slack or dust underground because of the danger of spontaneous combustion. We raise the run of the mine, paying constant rates. In other collieries there are different rates for lump coal and slack coal. In our Jharia collieries, where we have no screening plant, we do raise these separately. (To *Mr.*

Bray.) Certain gangs of labour are still employed in Jharra to raise and screen slack.

B. Possibility of economies in transport to Calcutta.

6 (a) **Improvement in wagon supply.**—Mr. Wardlaw.—Our collieries are mostly served by the Bengal Nagpur Railway and may get a certain advantage from being near the distributing station.

(1) *Difficulties as to indents.*—Mr. Judah. By haphazard methods we mean (1) irregularity of supply and (2) uncertainty of supply of wagons. We do not know from day to day on what basis the distribution will be. It may be public supplies that will be given, it may be loco, or special or emergency: but we are never told in advance and do not know what particular class to indent for: if we guess wrong we get no wagons. Naturally the manager indents for that class which is most necessary to him. Our suggestion is that the railway should take the collieries into their confidence and let them know in advance.

Mr. Keelan.—At the time when I indent for my collieries the railways do not know what supplies they will be able to get because my collieries are 14 miles away from the railway headquarters and my indents have to go in actually before the post has reached the railway official concerned. It seems to me a mistake that I should have to send in my indents 14 miles when there is a station within a few furlongs of me: why could not it be left to the station master there? I recognise of course that he is a small man and that the work of distributing 140 wagons may be beyond him when only 14 are available. The suggestion that we should telephone our requirements would not work. The mufassal telephone system is by no means perfect and we have to confirm every message in writing. (To Mr. Bell.)—It would be impracticable to instal a special telephone service as it would be a big thing and would mean that a special officer would have to sit at the head-office telephone the whole time. The indents are very elaborate and it would be almost impossible to telephone them.

(2) *Alternative indents.*—Mr. Keelan.—It is a nuisance that the collieries are not allowed to indent for alternative supplies: we have to make up our minds beforehand what to ask for and may make a mistake. Over-indenting is allowed but that is not the same thing.

Mr. Judah (To Mr. Legge).—It is true that the alternative indents of a large colliery would be very bulky, but every colliery has not so large a number of alternative destinations. I should not suggest of being allowed an unlimited number of alternatives, but I should say that we ought to be allowed two or three: that would help us and would be workable for the railways. For example, if I wanted to send coal up-country when there were restrictions in force I might send in alternative indents for (1) *via* Mogul Sarai, (2) up to Delhi and (3) to Bombay. For downwards we might have at any rate one alternative indent: it is less important to have a number downwards. (To Mr. Legge).—As to haphazard allotment we agree that the allotment by the Coal Transportation Officer involves a lot of variations. I should not, however, advocate a return to the old system. There is less of a scramble now-a-days and supplies on authorisation are more helpful to us. There is now some slight hope of having our indents met although we do not know when.

(3) *Irregularity in supplying wagons.*—Mr. Judah.—I agree that to a certain extent our collieries benefit by the fact of their having exceptionally good coal which is taken by important consumers who have a good chance of indenting wagons.

Mr. Wardlaw (To Mr. Legge).—I am not sure which are the districts to which we referred in our reply as receiving supplies twice weekly. It may be Rajhara up at Daltonganj where our output is so low that wagons are obtained only twice a week by mutual arrangement to the advantage of both the railway and ourselves. These collieries are not under me.

Mr. Judah.—This arrangement is not at all general.

*Mr. Keelan (To Mr. Legge).—*With reference to line 5 of our reply to Question 6(a) all that is intended is to explain what expenditure is involved by hand loading. We are not criticising the rake system. The remarks do not apply in fact to mechanical loading. We have no objection to rake loading as such. We know before hand the date when a rake may be expected.

Mr. Judah.—If we knew that we would have rakes every day we would fix labour accordingly.

*Mr. Keelan. (To Mr. Banerjee).—*It is not altogether a fact that the wagons are placed on the sidings at regular hours. They are occasionally irregular but usually that would be due to a breakdown on the line or something of that kind. I have had no complaints about this from my Managers. Our coolies usually live on the colliery and they wait until the wagons come in whatever time that may be. If the wagons are late we get 20 hours for loading and so it does not make much difference. Sometimes loaded wagons are left in the sidings overnight but this is exceptional and occurs usually when there is late running through the section. *(To Mr. Banerjee).—*I would prefer a regular supply of wagons daily to getting occasional rakes but it comes to much the same thing with us because a regular supply would amount to the equivalent of a rake or two rakes daily. Our smaller collieries however would not hold a rake. On the big collieries it does not make much odds because their daily demands are usually more than a rake.

Mr. Keelan.—The theory of the ten hour system is all right but in practice I think that too much is left to the guard. On a rainy day when the guard is over-worked he is very tempted to slip a siding and say that the wagons on it were not loaded.

Mr. Wardlaw.—On the Bengal-Nagpur Railway the wagons are not supplied at the same fixed time every day: but they give time for daylight loading and if they are late in making supply they are late in drawing out. So we get the full 10 hours daylight loading. If we have any difficulties we find that the Coal Manager of the Bengal-Nagpur Railway meets them: but as to this, the question comes in which manager with complaints gets in his report first. If the wagons are left in the siding overnight it makes no difference. We load only during the day and if the wagons are drawn out at 12 noon we actually get ten hours for loading by daylight.

Mr. Judah.—On the Mahuda section of the Bengal-Nagpur Railway there is a great deal of uncertainty when the wagons will be put in and when they will be drawn out. Sometimes they are left longer than 24 hours in the sidings. Also there is delay in weighing. I am not certain whether this refers to wagons going over the Bengal Nagpur Railway or over the Kathrasgarh section of the East Indian Railway. On this section we are uncertain of the time of supply, the time of drawing out and of the time of weighment. As things are the East Indian Railway is by long way the more satisfactory of the two systems.

*(4) Meetings of railway officials and colliery managers.—Mr. Keelan. (To Mr. Banerjee).—*I do not advocate a return to this system because the proper place for the manager is on his colliery and you cannot call in as many managers as you like to meetings at railway headquarters without detriment to the work. Most managers can get in to the District Traffic Superintendent's Office once or twice a month and discuss any difficulties. It might be a good thing to have the meetings but I find the present system good enough. We always get a patient hearing.

(5) Demurrage.—Mr. Keelan.—I should not call demurrage a "serious" matter, but I think that it ought to be entirely abolished. I agree that it is not serious when the proportion of wagons on which demurrage is paid is only $\frac{1}{4}$ per thousand.

*(To Mr. Legge).—*If we have to protest about a big demurrage bill we can usually settle it with the District Traffic Superintendent: but sometimes when a subordinate, an inspector for instance, is sent round we find it difficult to get satisfaction. We find that the railway is quite reasonable, but I may remark that a lot too much power is left with the guards.

It is perfectly true that, if a guard finds 19 out of 20 wagons loaded and the 20th unloaded, he sometimes leaves the whole lot in the siding as has been stated to the Committee by previous witnesses. In fact, a guard will go out of his way to go to a siding where he has noticed on his way up that the wagons are not ready, even though there are other sidings waiting with wagons ready for despatch: he gets home quicker if he does that. The human element comes in. As to the suggestion that it might be better if in such a case the whole 20 wagons were drawn out including the one empty wagon (to which the objection has been urged that the contractor is not willing to give the declaration note which is necessary under the rules), in my opinion the whole system of handing over the documents, *i.e.*, the chalans, at the siding is unsatisfactory. It would be better to have them sent to the nearest station where a receipt might be obtained for them. (To Mr. Banerjee.)—As regards a post box at the siding the guard says that he did not find any documents in it and the staff says that they were put in: it is a question which to believe. Sending documents to the station would be a remedy.

(To Mr. Banerjee.)—Besides the difficulty that N. P. wagons are incorrectly supplied there is the other difficulty that you get a wagon in the siding absolutely covered with directions and restrictions: it is hard to work with this sort of thing and it might be eliminated.

The class of man who looks after the loading of wagons is a Loading Overseer, usually an Indian, drawing between Rs. 30 and Rs. 60: he would be educated and could measure up wagons.

We often get wagons with the N. P. rubbed out with coal tar or oil, either by the guard to avoid the trouble of marshalling the wagons, or by the colliery people when they are short of wagons: and then we have a dispute when the mistake is pointed out at the weighbridge.

(6) *Load line.*—Mr. Judah.—I have no figures to show that the difference in specific gravity is negligible. The size of the coal might have something to do with the variation. Raniganj coal is in big pieces and Jharia in small as a rule. I should say that Raniganj runs to 42 cubic feet and Jharia to 40 or 41 cubic feet. I once actually had open wagons, which were specially flush-loaded, measured by a licensed measurer. I found that Sibpore and Dishergarh coal ran to 42 or 43 cubic feet, good Jharia to 40 or 41 cubic feet, and second class Jharia to 39 cubic feet. If you strike an average, you might take 40½ as a fair average perhaps.

Mr. Wardlaw.—If we load a Bengal-Nagpur Railway wagon flush through a mechanical screen we are two or three tons short. We have to heap up the coal.

Mr. Judah.—Dishergarh coal does not run so very big but Panihati does. It would be from 43 to 44 cubic feet. (To Mr. Whitworth.)—I have never known it go as high as 48 cubic feet.

Mr. Wardlaw.—In measuring stacks we use the figure of 43 to 45 cubic feet and we very rarely get a shortage.

Mr. Keelan.—As regards the difficulty of flush loading when the coal varies in size I should say have a wagon with which you get a minimum charge when you load to the top under the most unfavourable conditions.

Mr. Wardlaw.—My remedy would be weighbridges.

Mr. Judah.—I would say in general that admittedly open wagons are the most suitable and our great hope.

Mr. Wardlaw.—As regards the load line we have very little trouble with wagons that belong to the East Indian Railway or Bengal-Nagpur Railway: we measure up if there is any doubt, but generally it is about the foreign wagons that we have complaints. Sometimes these have no load-line marked at all and sometimes they have a line allowing you to load up to a certain point which when taken with the tare of the wagon makes the amount loaded too much for particular lines. We get complaints that the line is

too high in some cases. I know by experience that when loading over a mechanical screen plant we have to load higher than flush.

Mr. Keelan.—I think the East Indian Railway formula is very reasonable: we have followed it for some time, and if there are over-loading charges we deduct them from the Manager's commission. The result has been a great reduction. However, we are still charged occasionally. I think the reason must be either that the weighing machine is wrong or that the weighbridge Babu is afraid always to show the same figures day by day, and so shows occasional overloadings. If the railways would reduce the margin it would help. I think that since the penalty was imposed on overloading the East Indian Railway wagons have not been loaded up fully and that the railways have lost by it.

(7) *Weighbridges.*—*Mr. Keelan.*—As regards the idea that the collieries should have their own weighbridges, I personally would not recommend it because I fear that it would lead to congestion on colliery sidings. But the number of weighbridges might be increased.

Mr. Judah.—We send our wagons 20 miles distance from some collieries to be weighed and it is impossible for a manager to go down to the weighbridge and check the weights.

Mr. Keelan.—If you increase the number of weighbridges you might reduce the congestion and the delay.

Mr. Wardlaw.—If there were weighbridges at the collieries, the railway would have to accept the weights. As regards my own collieries we are quite close to the weighbridge and would gain nothing by the adoption of the suggestion.

Mr. Keelan.—Some of the delay in dealing with wagons is, I think, due to congestion at the existing weighbridges, whereas if the wagons were weighed at several places the trains might get through quicker. For my own collieries I should suggest a weighbridge at either Jamuria or Ikra: all my wagons down and up go through Jamuria station. I cannot arrange at my colliery siding for weighing, marshalling and despatching wagons, because it would mean remodelling the wharves. It would be convenient to have the weighbridge at a fixed point where all the coal from all the sidings came in, if a colliery was laid out so as to make this possible.

Mr. Wardlaw.—I know of no case at home where they actually weigh the coal under the screen.

Mr. Keelan.—(To *Mr. Legge.*)—I do not recommend sub-depots to any great extent but some sections call for it. (To *Mr. Banerjee.*)—I do not agree that underloading charges lead to overloading by collieries. There should be no penalty for overloading, but the underloading charges should remain. You cannot entirely do away with underloading charges or you might find a wagon being despatched with only two tons of coal in it. Most people would in any case be careful not to overload because their coal is thrown off at the weighbridge if a wagon is overloaded and this means great expense to them. This in itself would be a sufficient penalty and the removing of the overloading penalty would mean that the wagons would be more fully used.

7. *Type of wagons.*—*Mr. Wardlaw.*—There are mechanical appliances in all collieries in the Dishergarh group. Out of the eight, seven are power driven, one is not.

Mr. Keelan.—I have ordinary tipplers only and this gives automatic loading, but the tipplers are not mechanically driven. The number now is four and we have taken out another four because we got no wagons suitable for them and needed the space occupied by them for stacking. The collieries from which these were removed are Sibpur, Banksimulla, Damodarpur and Pretoria. These tipplers need open wagons. It is not my experience that the East Indian Railway are now supplying open wagons to mechanical plant and watching carefully that covered wagons are not given unnecessarily. But my collieries, having found it futile to ask for open wagons,

have given up indenting for them: when they did indent for them they did not get them. If the East Indian Railway were prepared to give a regular supply of open wagons we would certainly instal mechanical loading plant.

Mr. Wardlaw.—On the Bengal-Nagpur Railway our mechanical loading plant cannot work full time. The difficulty is as follows. We have a standard screening plant which gives three different sizes of coal over three different sidings. We need open wagons on the three sidings simultaneously in order to work the plant efficiently. But one day we may get covered wagons on one of the three sidings and then have to screen on to the line on that siding: then we have to incur greater cost in loading the coal from the line than we would do if it were being loaded from ordinary stacks. It often happens thus that we get open wagons on two of the sidings and closed wagons on the third.

Mr. Judah.—(To *Mr. Banerjee.*)—As regards the type of open wagons which we want we do not mind so long as it is a standard type with standard dimensions and a standard kind of door. (To *Mr. Legge.*)—I should think that the pooling of wagons is a very useful system. I have no objection to it. (To *Mr. Banerjee.*)—As to the cost per ton of loading in covered wagons it is more than for loading open wagons but all buyers from a long distance prefer to have them because they are a check on pilfering. As to pilfering I should put the loss of weight (as between railway invoice and ship's survey) at Howrah depot as from two to three per cent.: this would be the correct figure for the docks also.

8. Railway freight.—*Mr. Judah.*—As to the argument that it is unfair to ask the railways to reduce their charges when costs are up, I think that the increase in traffic would probably compensate them. The increase on railway freight between Jharia and Calcutta is from Rs. 2-7 pre-war to the present figure of Rs. 4-8-6. We do not get the rebate for all purposes, and not in particular on bunkers. Home owners prefer not to bunker in Calcutta because of the high rates for bunkering; these have also driven tramps away and they are doing a good deal of bunkering at Colombo which used to be done at Calcutta. On occasion when ships could easily have bunkered here the owners have preferred to wait till the ships got to Colombo. A rebate on bunker coal might be a help.

I do not agree that the steamer freight is a fair analogy with the railway freight. Steamer freight, it is true, went up very high and indeed to an abnormal figure (at the end of 1920 and early in 1921 the rate to Bombay was Rs. 21), but it has now dropped to Rs. 6-8. So steamer freights have dropped very considerably whereas railway freights have not dropped. In 1913, August, steamer freight to Bombay was Rs. 7 a ton and so it is now back to pre-war figure. But the railway rate is still 100 per cent. above pre-war.

9. Coal Transportation Officer.—*Mr. Judah.*—(To *Mr. Banerjee.*)—The Coal Transportation Officer can help to remove delays, which are due to circumstances controlled not by him but by railway officials, by pointing out where the delays have occurred; he can criticise forcibly in virtue of his being an independent transportation officer. In fact he does this now. When the allotment has been made he helps by pointing out to the railways any delays that occur, though possibly he cannot expedite the transit of particular consignments. Even though wagons are too few he helps by getting the existing wagons used to the best advantage.

I do not think that there is any scramble in the districts for wagons under the Coal Transportation Officer's sanctions, because all the details are settled in Calcutta. Sanctions come under different priorities (i) of date and (ii) of classification, so that scrambles in the districts are avoided. It is true that during the last six months when there has been a full supply of wagons there has not been much scope for the Coal Transportation Officer.

Small collieries have less chance of getting wagons because of a smaller wagon basis and because the other collieries raise better coal for which there

is more demand. If you want the smaller collieries to have a better supply you more or less compel buyers to go to collieries where they do not want to go. If you wish to give the small collieries a definite and assured supply of wagons you put them in a position to compel the buyers to come to them. I do not agree that the present system means giving preference to any particular kind of buyer. As things stand if a big buyer likes to buy from a small colliery it gets the authorisations.

As to Mr. Banerjee's suggestion that the buyers might be forced to take coal at the slack season I can only say that they have been asked to do so: but they have not agreed because they dislike locking up capital. I admit that if they could be forced to take supplies in the slack season there would not be any scramble. If indents could be met in full the Coal Transportation Officer would not be needed but he is a great help when wagons are scarce.

C. Possibility of economies at the docks and coalfields.

10. **Port charges.**—*Mr. Judah.*—(To Mr. Stuart Williams.)—The justification for the Port Commissioners' going back to pre-war charges on coal, even though this means that other trades would have to bear extra expenditure, depends on the proportion of their revenues derived from other commodities. The charges should be considered in relation to the volume of business. Taking coal as 25 per cent. of the whole, I do not think that the extra cost would affect other trades seriously. If coal is in greater difficulties than other trades, there is good reason for asking for a reduction of their expenses, but it depends on how the other trades would be affected.

(To Mr. Banerjee.)—If no coal goes out because there are no export orders, naturally the costs on other commodities will increase because the revenue from coal will fall.

12. **Loading and shipping facilities.**—*Mr. Judah.*—(To Mr. Stuart Williams.)—I should not think that labour charges are as cheap anywhere else as they are in India. But if we are to compete with places equipped with mechanical appliances we should put ourselves in a position to compete efficiently. Before we can get enough regular traffic to justify the expenditure on equipping the port with machinery for handling coal we must make our product as cheap as possible. (To Mr. Banerjee.)—As regards dumping, rakes would be necessary even if dumping were permitted. They are very helpful to the coal exporter because the train-loads come through in rakes without any interruption. In my opinion it is not desirable to dump: and only a proportion of the coal should be dumped so as to facilitate loading. There are several factors to be considered: irregularity of wagon supply, irregularity of labour supply, the smallness of the labour force at the docks and the time when steamers come alongside to load. You must remember besides that there are two classes of labour at the docks, one paid by the month and one paid by piece-work. The men who handle ground-coal and the men who handle wagon-coal are different and the former will not work wagons. So a combination of dumping and direct loading facilitates work. As regards our remark about the average of 500 tons per day, we mean that if every berth had a steamer at it, i.e., if there were 10 steamers in, at once loading coal, the present labour force could manage only 500 tons for each steamer.

14, 15 and 16. **Bunker coal.**—*Mr. Judah.*—As regards the last paragraph of our written reply, the railway freight has risen from Rs. 2-7-0 to Rs. 4-8-6. The total increase is about Rs. 3 per ton. We do not mean by saying "beyond that there has been an increase of 40 per cent. in railway freight, etc.," that this was in addition to the through rates: we were merely dividing up the total increase by percentages. As regards the increase in rents by the railway company, we had to pay up because the alternative was being evicted and there was nowhere else where we could go.

(To Mr. Banerjee.)—At Howrah depôt the coal that is stacked at the back has to be loaded into hoppers and then brought down to the foreshore

where it is loaded into lighters. We have no difficulty about the number of hoppers available because we have a constant flow of work. Probably if the work were spasmodic there would be difficulties about hoppers and it would be necessary to wait for them.

Dredging roughly speaking is done once a year. You cannot place barges alongside at ebb tide all the year round, but you can do so immediately after dredging is finished. Our experience is that the dredging at Howrah is never thorough. When the water is insufficient you frequently have to place boats between the barges and the jetties.

As to pilferage at depôts I think that the Watch and Ward staff have done some good.

D. Steamer freights.

17. Steamer freights.—*Mr. Judah.*—(To *Mr. Banerjee.*)—I have no personal knowledge of the cost of running steamers, but I am repeating the complaints which I have heard from steamer owners and steamer agents.

E. Comparative merits and prices of Indian and other coals.

18. Comparative merits.—*Mr. Judah.*—“The best Bengal coal” to which we refer in our written reply would be Dishergarh, Seebpore and the super-Jharias. As to Ombilin, I am going on hearsay: for the Natal coals we have analyses. I got a selected sample of presumably first-class Natal coal picked out of a heap of coal at the Kidderpore docks in August, 1923: it was a very clean looking coal and looked as if it had been washed. It was from a consignment brought up by Ellermans. The analysis proved it to be very similar to our Jharia 14-seam Bhuggatdih. The figures were these:—

	Fixed carbon.	Volatiles.	Ash.	Moisture.	Calories.	B. T. U.
1. Natal	61.69	22.76	13.86	1.69	6892	12643
2. 14-Seam Bhuggatdih analysis taken on 18th October, 1924.	66.10	19.69	13.40	.81	7021	12638
3. Dishergarh, Parbelia, a recent sample.	50.02	38.99	9.78	1.21	7026	12647

Every Dishergarh coal of ours is nearly as good as that. If it is claimed that South African coal is better than the best description of Bengal coal, our answer is that anyhow on analysis it is not so. Probably foreign importers have had bad coals which gave a wrong impression of what can be supplied from India.

(To *Mr. Banerjee.*)—I do not agree that Dishergarh coal cannot compete with South African coal because it is a long-flame coal and that only selected Jharia coal can meet the competition of Natal. The B. T. U.'s and the calories of our Dishergarh coals are not less than those of average selected Jharias. Moreover, we claim that our Dishergarh and Panihati coals are more uniform and more regular than the Jharia coal. Whatever may be said about steamer-coals we consider that Dishergarh coal is beyond question superior for the use of mills on the Bombay side. For steamer-coals also a mixture with Dishergarh in various proportions as dictated by experience will give a coal that is fully equal to the best South African.

19. C.i.f. prices of Indian coal at different ports.—*Mr. Judah.*—(To *Mr. Bray.*)—As regards the rates of freight which we have taken for cal-

culating the c.i.f. prices of coal at different ports, the rate for Colombo was recently Rs. 5 and within the last few days a parcel has been offered at Rs. 5-8; for Bombay a few months ago it was Rs. 7, since then it has dropped to Rs. 6-8 and gone up again to Rs. 7 and Rs. 7-8. The present price I should put at Rs. 7.

(To Mr. Whitworth.)—I do not think that to-day's quotation of Rs. 6-8 for Colombo is correct. If big owners were offered one hundred thousand tons' definite business, at Rs. 5-8, I think they would take it, rather than leave it. It would mean making a firm offer, and probably you would have to make enquiries in the United Kingdom. One full cargo could be got at Rs. 5. (To Mr. Banerjee.)—The details of our c.i.f. prices would be these:—

	Rs.	A.	P.	
Coal	8	0	0	
Railway	3	0	0	that is an average from Jharria and Raniganj.
River dues	0	8	0	
Wastage down to the docks at 2 per cent.	0	8	0	
Insurance varying with every port between $\frac{1}{2}$ to 1 per cent., say,	0	2	6	
Inspection charges				Nil.
Finance charges				We do our own finance
Agency commission, usually, about	0	8	0	but now we have cut it down.
Steamer freight				Varies for every port.

(To Mr. Banerjee.)—The freight to Sabang is now about Rs. 6. I have had an offer of freight as low as Rs. 5, but I could not entertain it as they wanted coal at Rs. 15-8, c.i.f. Sabang, which left us only about Rs. 4 per ton as f.o.r. price. The freight to Karachi is the same as the freight to Bombay, roughly speaking, or about, Rs. 6-8 to Rs. 7. The last steamer to Rangoon was at Rs. 4-8 which is slightly higher than pre-war freights, which approximated to Rs. 3. This figure of Rs. 4-8 was exceptionally low and when we take account of the expenditure it left the steamer people practically no profit. Generally speaking freights are nearly as low as in 1913.

20. **Prices.**—Mr. Judah.—The Natal c.i.f. price varies up to 30 shillings or 31 shillings, at Karachi and Bombay. There are also reports of offers down to 24 shillings and 6 pence: that is for South African coal, not necessarily Natal. I do not know definitely what the present price is: it might be 27 shillings or 28 shillings.

We tendered for supplying coal to the Ceylon Government Store-keeper. We quoted what we considered the competitive price of Rs. 19 a ton, c.i.f., for best Dishergarh: that was Re. 1 below South African. They contended that there was a 15 to 20 per cent. difference in quality between our coal and the South African coal, and that our price should be lower.

21. **How competition can be met.**—Mr. Judah.—To compete with South African coal at present we would have to quote at just about raising cost. We could offer first class coal at Rs. 17-8, c.i.f., Colombo, taking the sea freight at Rs. 5-8.

As to Bombay, the price will be Rs. 20-8 taking the price of the coal at Rs. 8 and the freight at Rs. 7-8. This would leave us no chance of getting in, but we have offered our coal at a less price.

As to sending coal to Bombay by rail it is, in my opinion, not at all desirable from a wagon-supply point of view to foster the transport of coal for long distances. If in spite of a wagon shortage you develop long distance trade over the railways you merely accentuate the wagon shortage. If the alternative were losing the business we would try any way open to us. But with railway freight at Rs. 15-6 it is hopeless to compete that

way. The sea route ought to be the natural outlet for the coal trade to Bombay. The way to conserve the wagon-supply is to run the wagons short distances. Sending them down to the docks we ought to get them back again in a week at the outside, but if you send them to Bombay it might take 6 weeks. A point to be considered is that several districts in Western India cannot be served by sea-borne coal and if railway freights remained as they are now they cannot be worked on railway coal and will be left for the foreign competitor. (To Mr. Bray.)—We hope to compete in Bombay by selling at or under cost price and by there being a drop in sea freights. We could get freight at Rs. 7 as against the figure of Rs. 7-8 which we have taken in our calculations.

(To Mr. Stuart Williams.)—At Rs. 7-8 the Bombay sea-route is cheaper than the rail-route. With coal at Rs. 8 at pit's mouth, the cost works out at Rs. 20-8: with railway freight at Rs. 15-6 the cost works out at Rs. 23-8. All you save by rail is Rs. 2 to Rs. 2-8 on discharging cargo which you have to pay on sea-borne coal. Rail-borne coal has only to pay Rs. 2-8 for cartage and that has to be paid for sea-borne coal also, but when you send the coal by rail there is less breakage in handling. A great deal of coal is actually carted in Bombay, only a very few of the mills have sidings.

Mr. Judah.—(To the President.)—As regards help against the competition in the internal Indian market we want a bounty. Where the money will come from for paying the bounty, it is not for me to say: I suppose, from general revenues.

F. Grading, inspection and certification of coal.

24 to 30. **Grading.**—Our objection to grading is that our coals are in groups and are well known, so that practically we have them graded already. The ignorance of our coal that was displayed in Singapore was due to lack of propaganda on the part of Indian shippers. South Africa has a traveller going round and telling people all about their coals. We have not. Why we have not I cannot say. I think our collieries are already supplying graded coal. The Bengal coal trade will have to follow the example of the South African in starting propaganda. The Indian coal firms are not likely at present to combine, I admit, but they will be forced into combining for this purpose of propaganda.

(To Mr. Bray.)—As a general idea a Grading Board would be the best step, but particular firms might do their own propaganda with advantage.

To Mr. Legge.)—I think that Indian coal can get back into foreign markets without the assistance of a certificate from a Grading Board if the individual colliery is prepared to sell at cost price which we are prepared to do.

The sort of difficulty which we were contemplating is this: a small owner has a seam of coal which is on the first-class list but which varies in uniformity: he will sell all the coal from it even if inferior in quality under the shelter of the entry in the list. There is variation in the seams and as you go deeper into the workings the quality may vary.

Mr. Wardlaw.—That is to say, if you take the whole seam right through. I should mention again that the Dishergarh coal is comparatively clean, a thing which cannot be said of Jharia coal.

Mr. Judah.—With regard to grading, I am giving the policy of the firm, but I shall certainly consult them on this matter of grading in the light of what I have just heard from the Committee as to the kind of grading that is contemplated.

Extract from letter of 28th January 1925, giving the views of Messrs. Andrew Yule & Co.'s Bombay agents.

Shipment of coal.—With reference to the method of handling shipment coal in Calcutta, which is of considerable importance in Bombay, they state

that the sea route is the better method of supplying coal to their local market, they would prefer lower cost and better efficiency in this route rather than a reduction of rail freights across India.

The condition of Seaborne Bengal coal on its arrival in Bombay is however very poor when compared with railborne coal, or the coal received from South Africa and this is particularly the case with the higher quality soft coal. This condition being directly due to the handling which coal receives at Kidderpore Docks.

A large proportion of coal is dumped at the docks before loading, and all the coal is lifted in small baskets and dropped thirty or more feet into the holes.

Even at the two berths with the present mechanical equipment, there is much breakage before the coal is finally shipped. The result is that on arrival at Bombay the coal is found to be very small and with a heavy percentage of dust.

Weighment of coal at docks.—A further point in favour of Natal coal, is that on shipment this coal is weighed, and certificates are issued of the exact amount of coal in each hold.

At Calcutta the only weights available are the survey figures taken for the purpose of collecting port dues, and it is impossible to sell any quantity, less than a whole cargo, without weighment on the steamer at Bombay. This practice is costly and unsatisfactory.

Our Bombay representatives do not advocate that at least half of the coal to be shipped should be dumped at the docks before a steamer is berthed.

They consider it preferable that the coal berths should be equipped to weigh the wagons, and discharge them directly into the steamer without handling, and consider it is possible to arrange for the coal to be despatched so as to avoid any necessity for dumping at the docks, even at the expense of some slight demurrage on the wagons, which would be compensated for by the reduction in handling charges, and yet give the steamer as quick, if not quicker, loading than at present. The elimination of weighing at Bombay would reduce stevedoring charges by four annas per ton, which should mean slightly cheaper freight.

(b) BOMBAY.

The Ahmedabad Millowners' Association.

WRITTEN STATEMENT.

My Committee is strongly of opinion that reduction in the railway freight of coal from Jharia to the different consuming centres of India is an imperative step precedent to the adoption of any other suggestions in regard to the export of coal. Coal being an indigenous product of this country ought to be made a cheaper commodity of consumption to Indian industries and other inland consumers before any steps to help its exportation are contemplated. It is rather unfortunate that South African and other foreign coal should be imported to this country with advantage to the ruin of Indian coal industry and hamper its progress. In the light of these facts an imposition of a countervailing duty on coal imported into Indian ports is a necessary measure. When Natal railways actually give a rebate on coal for purposes of export to the extent of about Rs. 4-11-0 per ton, it is high time for Indian Government to protect coal industry and Indian consumers by substantial reductions in inland railway freights, freights from coalfields to Kidderpore Docks, Shalimar and Howrah and a countervailing import duty of about Rs. 4 per ton. It is regrettable that coal mines in South Africa should receive rebates and bounties while a majority of the Bengal mines with six crores of invested capital should be unable to pay dividends and be compelled to combat with stuffs imported from distant shores.

In conclusion my Committee would observe that reduction of railway freights and other charges, free supply of wagons for transport of coal and a countervailing duty on imported coal would serve the best interests of indigenous coal industry, would enable Indian industries to get their fuel cheap and also help the export of surplus coal to other countries.

A. BIGGAR, Esq., Manager, Messrs. Bird & Co., Bombay.

ORAL EXAMINATION—FEBRUARY 5TH, 1925.

I have for two years personally managed the coal department of my firm's Bombay office, and before that was in the coal department in the Calcutta office for 2½ years.

Sale on analysis.

(1) **Comparison with analysis of Natal coal.**—We have had to agree to selling coal on analysis with a view to overcoming the prejudice that has arisen against Bengal coal. I admit that the coal received here in the past has not been as good as Natal coal: but coal equal to Natal is now available in Bengal. I can quote a cargo received here a fortnight ago from our firm which on extensive analysis (26 samples were taken) gave results exactly the same as the average of Natal coals analysed over the last eighteen months by the same analyst. The Bombay Chamber are, I understand, putting in figures as to average analysis: I now put in the certificates relating to this cargo.

HUGHES AND DAVIES.

No. A-2132.

Bombay, 23-1-25.

CERTIFICATE.

We hereby certify that a sample of coal received by us on 13th January 1925 from Messrs. Bird & Co. has been analysed with the following results:

Marked.—Average of analyses made on 26 samples of Bengal coal drawn by Major J. F. Davies from 7,000 tons, during discharging, from S.S. "Filippo Artelli," from 13th January 1925 to 22nd January 1925, on behalf of Messrs. Bird & Co., Ltd. and Messrs. Hiralal Himatlal and Sons.

**Samples Numbered.*—A2083 to A2085; A2094, A2095; A2099 to A2104; A2105, A2107; A2113 to A2115; A2118 to A2121; A2126 to A2128 and A2130 to A2131.

	Per cent.
Fixed carbon	61.29
Volatile Hydrocarbons	20.34
Ash	17.70
Moisture	0.67
	—
TOTAL	100.00
	—
Calorific value (Bomb)	6,791

J. F. DAVIES.

* NOTE.—The detailed analyses were put in to the Committee but have not been printed.

This figure of 6,791 calories is practically the same as the average for Natal in the past, which was 6,800 as against an average of 6,500 for Bengal coal.

The tests were made on samples taken by the analyst himself personally from each hold on the ship. It is not fair to compare results so obtained with those of analyses made on samples brought by some one to the analyst's office. We maintain that this has been an absolute test: but I may point out that in some of the samples taken of this consignment of ours the calories were 7,200.

(2) **Reasons for selling on calorific basis.**—We were forced to take up this business of sale on calories to prove that the prejudice against Bengal coal was not justified now even if it had been justified in the past. We do not know that we should be prepared to continue this permanently. Sale on analysis is possible but is an extra expense. It cost us Rs. 1,150 to have the tests made on the 7,200 tons brought up in the "Filippo Artelli," i.e., 2½ annas per ton. Our idea in starting the system was that if we did it two or three times we should establish a reputation for our coal and should not have to continue sale on analysis: but the Bombay buyer does not at present believe what we say about Bengal coal. The reason for this attitude is that bad coal, as we do not deny, was received in Bombay from Bengal in the past. Apart from African coal we might still require analysis to protect us against bad Bengal coal unless we have grading at Calcutta.

(3) **Sizing of coal sold on calories.**—(To Mr. Whitworth.)—I cannot say what the sizing of our coal brought up on the Filippo Artelli was like. I did not see the coal: for the contract laid down that I should get it analysed by Hughes and Davies and I made a particular point of not going on board myself while sampling was going on, in case people suggested that the sampling was not genuine. The coal is now at the Bunder and, I may say, has been mistaken there by several people for Natal coal.

(4) **Ash-content of coal sold on calories.**—(To Mr. Wadia.)—As regards the point that our cargo showed on analysis 4 per cent. more ash than the average Natal, I may explain that the Municipality attach importance to the calories and unless the ash were so excessive as to cause trouble in handling I do not think that it would affect the price fetched for steam raising purposes.

(5) **Sale on calories and the middlemen.**—(To Mr. Whitworth.)—It is a possible suggestion that a middleman might sell as of 7,600 calories a coal sold by us to him as of 6,800. If he were guaranteeing calories which the coal could not give, he would quote a price calculated accordingly, so as to stand cutting. It would not do us any good, but the calories actually yielded by the coal would, I suppose, be known. It might, in fact, do us harm. Such cases have actually occurred, I believe. The buyer of the Filippo Artelli cargo asked for 7,000 calories. We did not *guarantee* calories, but agreed to base our price on them. I believe the middleman guarantees a safe minimum figure.

Prices.—(To Mr. Whitworth.)—We expect in future to get the same price for Indian coal of the standard of the Filippo Artelli's cargo as is fetched by Natal coal. The price of Natal coal according to the competing quotation was, I think, nearly 2s. higher than that for our consignment, even taking exchange at one shilling and six pence. So if we can establish the same quality, we can beat them on price. It was in December that the quotation was made. We had not then proved that we could give coal of the same quality as Natal. We expect to be able to get the same price as Natal in future and do not expect, in view of the results given by this consignment, to have to undersell. If the buyers continue to be nervous we may have to go on basing price on calories.

(To Mr. Wadia.)—On present freights we could deliver at Rs. 19 c.i.f. easily. As regards the statement which, you say, one witness made that he could sell coal of 6,800 calories at Rs. 17, I should not like to have to cover him. It would mean Rs. 5 per ton pitsmouth. The reduction made in the price when the guaranteed calories are not reached works out at almost exactly 4 annas per 100 calories on the price quoted for the Filippo Artelli coal.

Necessity for middlemen in Bombay.—We sell c.i.f. to middlemen and would sell direct to the big bunkering lines if they would stack the coal themselves. Bringing in occasional cargoes, we should not find it pay to keep a plot on the Bunder for stacking. We do not therefore ourselves undertake to deliver to the mills, etc.

With conditions as they are in Bombay, I think the honest middleman indispensable: this is because the mills buy piece-meal: if they would take large quantities we could arrange direct sales. But they do not co-operate in this way. They have mostly no sidings and their supplies, for a day or a week at a time, are carried to them: I suppose that they do not have the accommodation to take more.

(To Mr. Legge.)—I have no direct knowledge of the mills, but I have had some inquiries from them for small quantities which I could not possibly handle, so I inferred that they prefer to buy piece-meal. I attach a recent specimen-inquiry*. A special reason for this at present is that the market is falling. To show what the attitude is of some mills, I have known them to inquire for Welsh coal delivered, stacked mill-compound, all large, which from a shipper's point of view is simply impossible. One reason why shippers gave up the idea of selling direct to mills was that they put up all sorts of conditions such as this. The coal is not "all large" when it arrives at Bombay and it would have to be rescreened after landing to be delivered "all large" at the mill. That is really impracticable: we can only guarantee the condition at the time of loading.

(To Mr. Whitworth.)—I admit that there is the risk that when we sell to a middleman he may substitute one quality for another. We should then get a bad name. That, I am afraid, is quite true. But the only alternative is to sell direct: and we have tried that before and do not like it. We have not the machinery for doing business that way; the carts, transport, etc. It would mean that we should have to do big business regularly to keep the staff and equipment fully employed. It is not a business that we are keen on. There are cases in which we could do it but there are also cases in which we could not with advantage.

Bunkering in Bombay.—The great difficulty in obtaining bunker contracts for Bengal coal is that Bengal coal is not arriving regularly and therefore we should have to land and stack it and bunker steamers from stocks on the depôt whereas African coal is coming in steadily and bunkering contractors can depend on being able to do their bunkering *ex* a discharging steamer and thus avoid landing and reshipping costs. Thus for bunker business African coal has only to compete with Bengal coal already landed. If Bengal coal arrived regularly enough to make bunkering *ex* steamer possible, we could easily undersell African which at present has an unfair advantage.

*The specimen referred to ran as follows:—

Feb. 14, 1925.

U R G E N T

Please complete and return

By 10-30 S. T. on 16-2-25.

GENTLEMEN,

$\frac{I}{we}$ beg to inform you that $\frac{I}{we}$ agree and bind $\frac{myself}{ourselves}$ to supply all or any of the undermentioned articles in good order and condition as specified herein to your Mills, within two days from the date of your order, at the rates quoted against them.

The quality of the articles to be approved of at the Mills by your Manager. If the quality is not approved of, $\frac{I}{we}$ undertake to remove at once, all or any of the rejected articles from the Mill premises at $\frac{my}{our}$ expense, failing which

the Company are not to be held responsible for any loss or damage occurring thereon. $\frac{1}{We}$ agree to accept mill weights and will take payment accordingly.

The rates given below include payment for tares and carriage to and delivery at the Company's Mill at _____ and goods therefore will only be charged at the rates, for the nett quantity delivered.

This offer is open for your acceptance for a fortnight only from this date.

Indent No.	Description of articles.	No. or quantity required.				Rate.			Per	REMARKS.
		No.	Cwt.	qr.	lbs.	Rs.	As.	P.		
	Natal Steam Coal . . . 50 to 48									
	Please state quality of what you quote. Quotations to include delivered-weighted and stacked in Mill Compound.									

NOTE.—No commission is to be paid to any one and if demanded by any person connected with the Mill or Office the merchant must at once report it to the Agents.

Yours faithfully,

Bombay, _____ 192

Name _____

Address _____

Mr. Biggar subsequently put in the following statement with reference to the Memorandum submitted to the Committee by Mr. C. N. Wadia.

With reference to many of the complaints regarding Bengal Coal which have been aired before the Indian Coal Committee, I think it only fair to point out that the quality of Bengal Coal varies considerably even from the same mine. Colliery Agents are perfectly frank and quote say "X" Colliery first class Rs. 10 F.O.R., second class Rs. 5 F.O.R. If the less responsible class of middleman quotes "X" Colliery coal at Rs. 9 and consumers buy

* NOTE.—Added in manuscript.

it, they are probably paying Rs. 9 for second class coal which they could have bought from Colliery Agents at Rs. 5. It stands to reason that the middleman cannot buy from Collieries and then under-quote Collieries for the same quality of coal.

Recent elaborate analyses have proved that there does exist plenty of Jherria coal (not to mention Deshergarh) equal to African and if (*vide* one witness examined on Thursday, February, 4th) consumers still persist that Bengal coal should be Rs. 1-8-0 cheaper than African coal then they are virtually asking for second class Bengal and have only themselves to thank if they get it.

BOMBAY CHAMBER OF COMMERCE.

WRITTEN STATEMENT.

D. Steamer freights.

17. **Steamer freights.**—The Committee are of opinion that this question can most suitably be answered by the interests concerned in Calcutta and they do not desire to suggest any reply.

E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—Welsh, Natal, Bengal, Australian and Japanese coals are, or have been, imported into Bombay in varying quantities and in the experience of the members of the Chamber Welsh coal has always enjoyed an advantage of approximately 10 per cent. over Natal coal which in its turn is 5 per cent. better than 1st class Bengal coal. The imports of Australian and Japanese coal are too small to warrant comparison in that connection and actually at the moment the only coal imported in large quantities comes from Natal and Calcutta. The Committee understand, however, that recent sales of Indian coal have been made on grade or calories, with results which are shown in Messrs. Hughes and Davies' report, and they see no reason why the margins, which they have mentioned, should not become smaller—as between Bengal and Natal coal—if the Bengal collieries adhere to their expressed intention of making a determined bid for the Bombay market.

19. **C.i.f. prices of Indian coals.**—The Committee realize that this is primarily a matter for the interests concerned at the ports mentioned, but assuming the coal is paid for on wagon-weights the c.i.f. price at Bombay of Indian coal at Rs. 8 per ton pitsmouth would be Rs. 20, on a Rs. 7 freight. Their experience, however, goes to show that coal shipped on wagon-weights shows an appreciable shortage on outturn, represented by a usual allowance of 8 annas per ton on that account, and they are informed that the loss occurs mainly in the course of transit between the colliery and the ship. They accordingly suggest that the possibility of adopting a more accurate basis of weight might be carefully examined.

20. **Prices.**—The c.i.f. price of Natal coal on 14th January 1925 was 28s. 3d.—29s. 3d. and of Bengal coal, at 1s. 6d. exchange, 27s.

21. **How competition can be met.**—By the shipment of a better quality coal at a lower price and by maintaining the higher standard of quality when attained.

22. **Possibility of new markets overseas.**—We do not consider that there are at present any new markets overseas in which it would be possible to introduce Indian coal. It is more important that the Indian coal-trade should regain the markets which it has previously held in Bombay, Colombo, Aden, Karachi and Singapore. The Committee's answer to the previous question indicates the only possible means by which that end may be attained.

23. **Special assistance to other coals competing with Indian.**—The Committee have no knowledge of any special concessions in regard to steamer freights and the details of the rebate allowed on the South African railways must be available to the Indian Coal Committee. The only evidence in their possession of the effect of the concessions is the rise in the imports of Natal coal since 1920.

F. Grading, inspection and certification.

The Committee are not in a position to reply in detail to the questions on the subject of grading but they desire to invite attention to the extent to which the largest Bombay consumers are buying coal at the present time on the basis of its calorific value, subject to an adjustment of the price after the requisite tests have been made. The results of recent tests are summarised in the letter from Messrs. Hughes and Davies appended to this statement.

Letter No. 2118, dated 23rd January 1925, from Messrs. Hughes and Davies, of 31, Marzban Road, Fort, Bombay, to the Secretary, The Chamber of Commerce, Bombay.

In continuation of our 2114, dated 21st January 1925, we have much pleasure in giving you herewith the comparative results of our analyses of various coals, made by us during the past 18 months. In most cases we have to take the word of the owner that the coal comes from the place named, but are sure the majority are correct.

Bengal coal.—*Sampled by us at depôts, docks, and mills, etc.*

Average analysis:—

	Per cent.
Fixed carbon	54.0
Volatile hydrocarbons	26.0
Ash	18.0
Moisture	2.0
	<hr/> 100.0
Calorific value (Mahler Bomb)	6,502
British Thermal units	11,704

Evaporating capacity—

Theoretically one pound of this coal will evaporate 12.13 lbs. of water.

Practically one pound of this coal will evaporate 8.08 lbs. of water.

Highest Results:—

	Per cent.
F. C.	57.73
Vols.	25.15
Ash	16.37
H ₂ O	0.75
	<hr/> 100.00
Cal. V. (M. Bomb)	6,877
B. T. U.	12,379
E. C. Theo.	12.83 lbs.
E. C. Prac.	8.55 „

Natal coal.—*Sampled by us at depôts, docks and mills, etc.*

Average Analysis:—

	Per cent.
F. C.	57.0
Vols.	28.0
Ash	13.0
H ₂ O	2.0
	<hr/>
	100.0
	<hr/>
Cal. V. (M. Bomb)	6,788
B. T. U.	12,218
E. C. Theo.	12.66 lbs.
E. C. Prac.	8.44 „

Highest Results:—

	Per cent.
F. C.	59.71
Vols.	26.71
Ash	11.86
H ₂ O	1.72
	<hr/>
	100.00
	<hr/>
Cal. V. (M. Bomb)	7,118
B. T. U.	12,812
E. C. Theo.	13.28 lbs.
E. C. Prac.	8.85 „

Picked Samples, not Sampled by us, usually a few pieces of nice clean coal, without any slack, sent to us for analysis have given up to the following results:—

Bengal.

	Per cent.
F. C.	63.09
Vols.	23.00
Ash	13.39
H ₂ O	0.52
	<hr/>
	100.00
	<hr/>
Cal. V. (M. Bomb)	7,414
B. T. U.	13,345
E. C. Theo.	13.83 lbs.
E. C. Prac.	9.22 „

Natal.

	Per cent.
F. C.	66.22
Vols.	24.02
Ash	8.68
H ₂ O	1.08
	<hr/> 100.00
Cal. V. (M. Bomb)	7,625
B. T. U.	18,725
E. C. Theo.	14.04 lbs.
E. C. Prac.	9.36 „

Durban.

	Per cent.
F. C.	68.93
Vols.	22.68
Ash	7.74
H ₂ O	0.65
	<hr/> 100.00
Cal. V. (M. Bomb)	7,765
B. T. U.	13,977
E. C. Theo.	14.5 lbs.
E. C. Prac.	9.68 „

We reckon that Bengal coal landed in Bombay should average:—

	Per cent.
F. C.	55.0
Vols.	25.0
Ash	18.0
H ₂ O	2.0
	<hr/> 100.00
Cal. V.	6,500

Coal specially picked from a particular Seam and Colliery would of course go much higher. For instance, we have just concluded sampling and analysing 7,000 lbs. of "Bird's Bengal Coal" during discharge from a steamer, 8 days sampling, total number of samples drawn 26.

Average Result:—

	Per cent.
F. C.	61.29
Vols.	20.34
Ash	17.70
H ₂ O . . . . .	.67
	<hr/> 100.00

Cal. V. (Bomb) 6,801 Highest
result 7,082 with 15 per cent. Ash.

We consider this a first class shipment when compared with the average South African coal, and reckon the latter should average:—

F. C.	. . . . .	58 to 60
Vols.	. . . . .	25 to 30
Ash	. . . . .	10 to 13
H ₂ O	. . . . .	1 to 2
Cal. V.	. . . . .	6,800 to 7,000

We trust that the above information will be of assistance to your Committee, and are willing at any time to give further information if necessary.

E. GORDON CAMERON, M.I.M.E., M.I.E.E., M.R.S.I., Mechanical Engineer, Bombay Municipality.

ORAL EVIDENCE—3RD FEBRUARY 1925.

The maximum amount of coal purchased in any year by the Bombay Municipality was 36,000 tons, but now that we have electrified, the amount has fallen very considerably.

My experience of coal is based on 16 years in charge of boilers and plant. I was also Chief Engineer for two electric power schemes in the collieries and I have also consumed a good deal of coal in Calcutta.

I have a unique shipment of coal which arrived last week per S.S. "Filippo Artelli" of which a series of analyses has been taken and which is being sold to us on a guarantee of calorific value.

Comparison of different coals on calorific basis.—I have received a considerable number of tenders for coal in 1925-26, and I have tabulated them on a calorific basis. The result of it shows that South African coal is dearer than the Indian coals. This statement of tenders has not yet been put up to the Municipal Standing Committee. There have been 10 firms tendering for 14,000 tons, and these firms have put in a total of 22 alternative tenders all of which I have reduced to a common calorific basis. (I have put in a copy and have no objection to these figures being published as long as the names of tenderers, etc., are omitted).

(a) As regards tender No. 3 South African coal, 1,000 calories work out at Rs. 3-1-2.

(b) As regards tender No. 5 Northern Navigation with a calorific value of 7,000 works out Rs. 3-7-9 per 1,000 calories.

(c) For Natal coal, the calorific value works out at Rs. 3-3-7 per 1,000.

All the above are on a guarantee figure of calorific value for coal delivered, stacked and weighed at our dépôt.

(d) For Bengal coal No. 14 seam Jharia, according to tender No. 10, the price per 1,000 calories works out at Rs. 2-14-3. The more usual price for Bengal coal works out at Rs. 2-15-7.

Central Provinces coal is usually more expensive than Bengal coal; it has a greater percentage of ash and a low calorific value. The price works out at a maximum of Rs. 3-9-0 for Recva coal, down to Rs. 2-14-3 per 1,000 calories for other grades.

Central Provinces Chikka works out at Rs. 2-13-7, which is the cheapest of all, but there are very few places where we can use it; it comes in for steam-rollers and such like. The objection is that it has 25 per cent. or 26 per cent. and sometimes over 30 per cent. of ash. There is another factor to consider and that is that the boiler-capacity which is sufficiently large for use only with a good-class coal will have to be increased before you can keep steam with inferior coal.

In my notes, I have treated coals with above 6,700 calories as first class, and below that as second class: tender No. 10 is the best in my opinion. There is only one case in which a different price has been quoted for delivery at Worli and delivery at other depôts. There are certain depôts for delivery at which the quantities have not been settled. That is a bit of a gamble: only 2,000—3,000 tons out of a total of 15,000 will be delivered at these places.

(To Mr. Whitworth.)—7,000 calories is the guaranteed minimum for the present contract. In earlier contracts the figure was much higher and was only attained in about 2 cases in the two years' supply.

The South African coal on an average worked out at about 7,000 calories over the year so far as I remember. This was in the year before last, which was the last occasion on which we used it. In a mill or any concern in which they are short of boilers, it pays to get coal of a high calorific value in order to keep the plant running up to speed. I may remark that the Smoke Nuisance Committee have recently reported that a great deal of smoke in Bombay is due to the use of South African coal.

Contract governing purchase on calories.—I introduced this system in Bombay and I drew up this model form of contract of which I have put in a copy. The Bombay Port Trust and the Improvement Trust have adopted this. Four or five years ago, we were getting very bad coal and with a considerable amount of dust, and we were not altogether satisfied. The Railways on the Calcutta side were getting very good service and we got what remained after everybody else was satisfied. This was when we were being supplied by the Mining Engineer to the Railway Board. Afterwards we tried ordinary contractors, and found that the results were very much worse. After that in order that we might bring them up to scratch, I tried this form of contract.

I would draw the attention of the Committee to the following points in the contract.

Clause 3 gives power to us to vary the quantity contracted for by 20 per cent.

Clause 4 gives the contractor option of supplying 20 per cent. in excess of the demand.

Clause 5 contains definitions of "hand-picked" and "screening." Incidentally the greatest drawback of Bengal coal is bad loading and bad screening. I myself erected screens when I was at Sodepur. These are very effective in removing dust and should be copied. When the colliery managers are paid by total despatches, naturally everything raised is sent off and no attention is paid to screening.

Sampling and analysis.—Messrs. Hughes and Davies are our analysts. They sample each consignment of not more than 500 tons and take a test to see that not more than 15 per cent. of the coal goes through a $\frac{3}{4}$ " mesh in the case of steam coal and 10 per cent. by weight in the case of rubble coal. Sea-borne coal goes direct to the bunders but we make tests at the place of delivery. The reason for this is that, when coal was expensive and was fetching Rs. 50 a ton in Bombay, we believed there was substitution by the carters. When taking the samples, we do not allow one sample to represent more than 500 tons. The analyst goes round the heap taking down shovel-fuls to a total of 15 cwt. This he mixes and halves, and again mixes and halves, etc., till he reduces the whole to a residue of 30 or 40 lbs. Out of this he takes three samples of 12 lbs. each: one he gives in a sealed bag to the contractor, another in a sealed bag to the Municipality and the third he takes for analysis. The analysis made is an approximate one for fixed carbon, volatiles, ash, moisture, and calorific-value by the bomb calorimeter and not by the Dulong system, as used by various firms in Calcutta. The reason why we use the bomb calorimeter is that we believe it to be the more accurate. It usually gives a reading of 300 calories lower than the other system. We have had our analysis counterchecked at the Mint and in England and got the results to correspond very closely indeed.

To test for slack, we take about 10 tons from a heap when the coal has been delivered on site usually by cutting off the corner of a stack which is

then screened. We make this test on any coal which is obviously bad when we look at it.

The coal is put into heaps of 100 tons or so and we take the worst of these as our sample if we wish to. The contractor makes the heaps and it is up to him to see that the heaps are more or less of equal quality: that avoids the difficulty that, when coal is loaded in a ship's hold, there is a lot of slack immediately under the hatch.

(*To Mr. Whitworth.*)—It might be conceivable that the sample would not give a fair idea of the whole consignment if the coal came from one of the Jharia seams, of which the top and bottom differed widely. I know that the particular seam referred to varied considerably, but I did not know it varied so much. However, it is up to the colliery manager to see that he gets even loading. With a big consignment of 5,000 to 6,000 tons, there should be even mixing.

Our present suppliers are evidently prepared to face this risk, and I may mention that a great deal of coal is now being bought in Bombay and sold on calories and analysis. Between the Port Trust, the Improvement Trust and ourselves, Bombay is probably buying 100,000 tons of coal annually on guarantee of calorific value.

Loss in weight on transit.—We insist on getting the correct percentage of large coal delivered in our yard. Rail-borne coal has less dust than sea-borne. When we used to do our own carting through a contractor we found that 2 per cent. was the wastage on the way. There was however one consignment of coal for which the G. I. P. Agent as a special case permitted us to weigh 30 wagons at Byculla: it showed 4 per cent. shortage. Three or four years ago, we had 3 wagons in which the coal had been transhipped on the way, and 50 per cent. of the total was missing. In another case, 80 wagons showed a shortage of 30 per cent. We then took up the matter and ascertained that if the coal had been sent at railway risk instead of owner's risk it would have cost us Rs. 12,000 more than it had done even taking into account the shortage.

Now the loss to the contractor works out at about 2 per cent. in the case of rail-borne coal and the contractor loses about 1 per cent. from the wharf to the place of delivery. In a consignment, when we believed that wagons were looted, the shortage was 4 per cent.; now I believe the average is down to 2 per cent., but I can't say how this compares with the loss when coal is brought by sea.

As to substitution, I am pretty certain that a good-class coal is frequently sent by sea and rail to Bombay and that inferior coal is substituted at times between the dumps and the destination or else inferior coal is mixed with the good coal on the dumps in Bombay. Probably the bad name of the Railway Board coal was in part due to this.

The railway refuses to weigh any wagons sent at owner's risk. This I consider to be grossly unfair. They always refused to weigh the coal for us except in one case, and even then it was without prejudice and on the understanding that we would not base a claim on it. The reason why I consider their refusal to weigh as grossly unfair is that when 20 tons of coal are despatched we should have some assurance how much arrives, so that we may be able to reckon whether it paid us to have the coal sent at our own or at railway risk. Our coal was received at the Byculla coal-yard. The railway authorities would not reweigh even if the wagon was only half full, and moreover they would not give a voucher showing that the wagon was handed over in that condition.

The wagons do not run into our yard, and most of our coal is now sea-borne, and is either stored in the dump on the Bunder or delivered to its destination as soon as landed. The contractors know our requirements, and they do not deliver more than we need.

There used to be 3 weighments for coal delivered to us, first, at the colliery weighbridge, secondly when it is loaded at Byculla, and lastly at our own

yard. The shortage during these last 2 years does not interest us. I am told that it is 1 or 2 per cent. I understand that this is for coal sent in closed wagons, which the contractors prefer in order to prevent pilferage.

General analysis of coals bought on calories.—We keep the contractors down to a certain analysis: for example, volatiles cannot be more than 26 to 30 per cent., and ash usually not more than 12 per cent. but we sometimes find 15 per cent. which is not really a bad figure. In any case a high percentage of ash reduces the calorific value of the coal, for which the supplier is penalised. With Pench Valley coal, we get sometimes 25 per cent. or 30 per cent. ash. As to moisture, it is usually about 2 per cent. with our coals.

We buy our coal on calories, and we ask for coal from one seam only when possible. The contractors tell us whence the coal is coming and produce the loading certificates because they have a habit of mixing coal from various seams with 14 seam or other good coal. Our present consignment comes from Loyabad, Mudidih and Budro Chuck.

In this last shipment samples were drawn daily by Messrs. Hughes and Davies when the ship was unloaded and an average of 26 samples gave 6,801 calories. The coal from Pathardih side none of which is in this consignment, gives I find 6,900 calories, which is about equal to any South African coal in my experience as received in Bombay. I am speaking of analysis made by our own analyst, but the analyses submitted by tenderers are frequently on picked samples and show 7,400 to 7,600 calories. If these are genuine, depreciation of the shipment on the way must have amounted to about 600 calories. South African coal which I had for one year gave usually not more than 7,000 calories but occasionally 7,200 and it is not much better than the best Bengal. I would, however, draw attention to its excellent condition, for except in one shipment it was free from slack and free from impurities.

The coal supplied by one Calcutta firm at Rs. 18 c.i.f. has a guarantee of 7,000 calories, but the actual selling price taking 6,800 calories comes to Rs. 17-7-6: that is the price paid by the middleman. This price is from Re. 1 to Re. 1-8-0 less than the c.i.f. price of any South African coal. This Calcutta firm does not deliver or handle coal but will send the cargo to Bombay. There they do not actually deliver, or stack and weigh it, but get a middleman to do this who takes as a profit, say, annas 3 or annas 4 per ton. The price of Birds' or Andrew Yule's coal at say Rs. 17-7-6 c.i.f. Bombay compares most favourably with South African which is quoted at a figure higher by Re. 1 or Re. 1-8-0.

We buy on calories, but we also look to the general analysis. The reason why I do this is that I have always been interested in coal and I have personally carried out numerous analyses myself. I have in my file the analyses of practically every coal in India. The proposed certificate of grading would be of no use at all to me, because what guarantee is there that the coal delivered at our stack is the coal belonging to the consignment which is covered by the certificate? The only precaution against mixing of coal or substitution in Bombay is to use analysis. There is no other way to stop mixing here. The tenderer gives the analysis in his tender of the coal which he intends to supply. But we are not interested in it until he actually delivers the coal, and we do not care what he has got in his stack so long as the analyses at destination are correct.

As regards the complaints in Bombay that Bengal firms are not sending good coal, I think that the blame is to be shared between the Bombay middleman and the Bengal supplier, but it is certain that bad coal is often loaded in Bengal: I have myself seen wagons with coal which has come straight through from Bengal, and I had experience at Jharia and elsewhere and know the sort of loading common at the other end.

(To Mr. Whitworth.)—The coal in the last cargo received for the Bombay Municipality was Loyabad, Mudidih and Budro Chuck coal, and it took 8 days to unload.

The following are the figures for the calorific value for each day's sample taken by Hughes and Davies:—

	Calories.		Calories.
1st day	6,798	5th day	6,770
2nd „	6,941	6th „	6,843
3rd „	6,759	7th „	6,714
4th „	6,716	8th „	6,837
Average		6,801	

The largest variation is about 225 calories. The middleman guarantees 7,000 calories at Rs. 18 c.i.f. The actual price paid was Rs. 17-7-6, because the calories were lower. This is one of the first occasions on which the collieries have consented to give a guarantee. The middleman in this case purchased from the colliery Managing Agents on a calorific basis and so protected himself when submitting his tendered price.

The ash-analyses varied on this particular consignment, and different tests gave results as follows:—

17-7	17-3	18-08
17-19	17-58	18-27
16-16	18-66	16-62
18-58	20-38	16-76
15-8	17-2	18-71
17-47	17-72	16-29
18-95	19-07	19-77
17-3	16-4	18-51
18-3	18-86	16-31

The guarantee was that ash-content should not exceed 16 per cent., but the question of ash is always very difficult, and we do not in practice penalise on it because we know that it is impossible even out of the same stack to get exactly the same analysis and also when the ash is high the calorific value is decreased proportionately and the penalty is enforced on the decreased calorific value.

With a difference of about 5 per cent. of ash, we do not make any reduction; actually we have never yet penalised on ash. The variations in this case are somewhat big, but the penalty for excessive ash is paid by the lower price paid for the reduced calorific value.

As regards taking of samples I usually have a small sample coked and afterwards burnt to ash. If the ash is reddish, we assume that the coal will clinker. This test is only made before a tender is accepted for a coal which we do not know, as clinkering is a serious defect in coal to be used in large boilers. If the volatiles are very low as happens with Welsh coal, we know that the coal needs forced draught and frequently special grates for perfect combustion and that it would not be satisfactory for general use in Bombay unless mixed with Bengal coal. Coals such as Pench coal need a forced draught, but are, in my opinion, much better when used as pulverised fuel.

Another way to value the coal (but I do not think it is practicable in the Mills) is on the "Performance Basis." To do this a water-meter is fixed to the boiler feed pump and the amount of water evaporated is measured. The cost is then calculated for evaporating say 1,000 gallons of water from and at 212-F. degrees and then payment is made on the result. This is the system followed in large electric power-stations at Home, and in other concerns. There is nothing to prevent any purchaser buying on the performance or calorific basis. I have in fact been approached for information by one of the millowners who are considering this matter. People in Calcutta may regard a sale on analysis as impossible but they are coming round to it. In one

tender 17 firms tendered, many of which have English Managing Agents. Among them were Turnbulls, Andrew Yule, and Birds. The Calcutta firms do not want to sell on analysis but they are finding that they will have to do it, and they are doing it now. The Port Trust who purchase 60,000 tons have based their contracts on the identical agreement of which I have put in a copy, and they will work on the same arrangement.

Practical working of the system of purchase on calories.—It is now the third year in which we have been working on this method. In one year the man who tendered at Rs. 20 per ton for his coal was paid on an average of Rs. 19. In another year, the man tendering Rs. 23 was paid an average of Rs. 20-12-0.

Working on these lines for the past two years, we have made a saving of, I believe, about 10 per cent. on our coal bill.

We penalised one firm to the extent of Rs. 22,000 on deliveries in 9 months. In the past we seldom got the calorific values that were guaranteed because the tenderers accepted certificates as to the calorific values of the coal tendered which were impossible to attain. After being penalised they now usually quote proper calorific values and we do not expect to impose many penalties in the future. Sometimes the guarantee is absurd. Take for example the Joyranpur Colliery, for coal from which a tendering firm guaranteed 7,460: in my opinion they can never get a figure like that even from selected samples, and I do not know of any coal in India which has given that calorific value consistently. The sort of thing that happens is that the colliery owner sometimes gives an inflated value of its coal to the middleman, who then fixes his price on this calorific value and quotes it to us. Often, moreover, it pays the middleman to quote on calorific value in order to get his tender considered, because we refuse to look at any coal of low calorific value. Even if he has to pay the penalty, it often pays him to get the business on these terms. To detect this it is necessary to have the coal selected by a specialist and not at random by an unexperienced person who does not know the collieries or understand analysis. The collieries do not as a rule quote direct to us. Turnbulls is one of the few that have done so.

(*To Mr. Legge.*)—Second class coal is being offered as of 7,000 calories instead of 5,800. The contractor pays the penalty, and still often gets a price better than he would if he sold it as second class coal. That is the reason why we find out about the coals beforehand. In such a case we reject the coal and buy in the market at the risk and cost of the contractor. He deposits 5 per cent. of the estimated amount of tender and we deduct 5 per cent. at the time of each payment, which is refunded at the termination of the contract if it has proved satisfactory. We found that the Improvement Trust were getting their coal through the same contractor at annas 2 a ton cheaper than we were getting. We made enquiries and found that the reason was that they took no deposit and kept back only 2 per cent. instead of 5 per cent. as we do. It represented their interest on the capital tied up.

There is one difficulty experienced with this middleman system in Bombay. If they definitely tender a certain coal there may be difficulties. In one case, the middleman went to a colliery and obtained a guarantee and a price, but the offer was not open for long: he got a contract and then the colliery tried to put him up by Re. 1-8-0 per ton. In such a case if the man sticks to the agreement he loses money, and so we give a certain latitude as to the coal that is to be supplied. We prefer certain seams if we can get them, and the tenderers tell us in confidence, when they tender, what coal it is that they mean to give. After making the contract, they negotiate with the collieries with which they have the option.

Our condition is that there should be no mixing, but the question of enforcing this condition is not easy. If a man mixes different seams, he is giving away by the analyses which are a sure guide.

(*To Mr. Legge.*)—I am helped by my special knowledge of Bengal coal. Others who have not got this knowledge can appoint a man to safeguard

their interest. It would not cost them much. We pay for very few of the analyses that are taken.

A cargo is usually 5,000 to 6,000 tons, but we take only about 2,000 tons a month during the dry season. I imagine that other people also get some of the consignment, for it does not pay the middleman to incur heavy wharfage dues for 2 months on end. Our contractor has a contract with one company for supplying 10,000 or 20,000 tons (I forget which), with a public body for 15,000 tons and with the Municipality for 26,000 tons. He gets a shipload in and delivers it immediately amongst the various people and thus avoids having to pay for storing it. This tends to keep the price low showing a clear saving of 12 annas per ton.

The Bombay middlemen.—(To Mr. Whitworth.)—The reason why Calcutta firms who have offices in Bombay do not do their own handling of coal is that they can handle it much cheaper through the middlemen. The middlemen have their own gangs who do the weighing. They have their own carts and lorries on which they have the first call. Also they have a business connection with the consumers and unless the business is done through them the coal never seems to give the same satisfaction. It does not matter what happens, the middleman will still exist. Even if the colliery quotes direct the middlemen will handle the coal. The middlemen work very cheaply. They have no establishment charges. They or their relations go down to the bunder and the ship and watch the coolies themselves. They have less trouble with their labour. They have no strikes, and the whole thing is more or less a family affair.

Prospects of Indian coal in Bombay.—I most certainly think that the outlook for the Indian coal in competition with South African is improving. If the Bengal coal trade keeps up the standard, I imagine that people will give up using liquid fuel. They made agreements for liquid fuel, when coal was unobtainable, for various periods and many of these agreements are running out soon. To compete with coal, oil fuel will have to come down to Rs. 30 a ton, whereas the ordinary rate now is in the region of Rs. 50, although I am informed the Railways have a special figure of Rs. 35, because they use a large amount. For ourselves, we paid Rs. 50 for oil for our oil engine. But the price must come down to Rs. 30 or less in order to compete. The millowners who are using oil are sure about the price of oil fuel and they may come back to coal. But electricity is also coming in; we found that the installation of electricity gave us a saving in one of our pumping stations.

The system of purchase on calories as tested by results in boilers.—As regards the point whether practical experience bears out the results of the analyses, Braithwaites who are constructing our pipe line have on occasion written that they could not keep up steam with a particular coal, and when we analysed the heap, we found that the coal was inferior. The stack had not been analysed until after they started to use it.

Costs of analysis.—If the coal-analysis comes up to the guarantee we pay the fees: if it does not, the supplier pays. The charge for working out the calorific value is Rs. 15 if a sample is sent to the analyst. Approximately, proximate analysis and working out of the calorific value costs Rs. 45. If the analyst takes the sample he charges a total of Rs. 60 for doing the approximate analysis and for working out the calorific value. Usually this is enough, but in doubtful cases we have the ultimate analysis made at our own cost.

(To Mr. Legge.)—When we send out to have a coal-analysis made at Mulund, it costs us a fee of Rs. 150 to Messrs. Hughes and Davies, and we do not put this fee on to the contractor.

Braithwaites send down samples taken in the presence of the contractor and we sometimes find that it is 400 or 500 calories down: instead of 7,200 calories as guaranteed it will be 6,800 or so; when below this figure it makes a wonderful difference to a boiler.

ANNEXURE A.

BOMBAY MUNICIPALITY.

EXECUTIVE ENGINEER'S DEPARTMENT.

(MECHANICAL BRANCH.)

Contract for supply of coal for 1925-1926.

TENDER.

Date _____ 192

To

THE MUNICIPAL COMMISSIONER

FOR THE CITY OF BOMBAY.

SIR,

I_{we} do hereby offer to supply 12,000 tons of coal referred to in the Schedule to the accompanying form of Contract, at the rates entered in the Schedule of Rates, sent herewith and signed by ^{me}_{us} I_{we} note that the Schedule rate includes the cost of carting, weighing, etc., and stacking the coal at the different Depôts.

I_{we} have examined the details of all the articles to be supplied and have carefully noted the conditions of the contract with all the stipulations of which I_w agree to comply; and I_{we} will undertake to supply coal in such monthly quantities as may be advised from time to time.

I_{we} have this day deposited, as earnest-money, with the Chief Accountant of the Municipality, the sum of Rupees *three thousand* not to bear interest, or the equivalent of Rupees *three thousand* in Public Securities and I_{ve} do hereby agree that this sum shall be absolutely forfeited by ^{me}_{us} if I_{we} withdraw ^{my}_{our} tender before the decision of the Standing Committee is known, or if, in the event of your accepting ^{my}_{our} tender, I_{we} fail to execute the formal Contract or to make Contract deposit equivalent to ten per cent. on the amount of the Contract when called upon to do so.

NOTE:—Cheques will not be received either as earnest-money or as deposit.

No alteration which may be made by a Tenderer in the Contract or in the Schedule will be recognized.

Tenderers are to strike out such words as do not apply.

Securities of the Government of India, and any Securities guaranteed by Government, Securities of the Bombay Port Trust, Securities issued under the City of Bombay Municipality Act, 1888, and any Bombay Municipal Debentures or other Securities. (See City of Bombay Municipal Act, 1888, Section 3, Clause O.)

The full contract deposit must be made and the Contract must be executed on the day to be fixed by the Executive Engineer, and intimated in writing to the successful Tenderer. Postponement of the payment of the full contract deposit, and the execution of the contract will, on no account, be permitted by reason of the Municipality having in possession other deposits on account of other Tenders or contracts, which deposits may be or become returnable to the Tenderers and which they may wish to transfer as a deposit under this contract. Such transfers will not be permissible on any account.

NOTE:—In the event of the deposit being made in public securities the value of those securities will be calculated at 5 per cent. less than the Market value on the day of acceptance of such securities.

N.B.—Tenderers are requested to sign both the Forms of Tender as well as the Schedule of Rates.

All tenders not so signed will be liable to be rejected.

We do hereby agree to pay all the charges of whatsoever nature, connected with the preparation, stamping, and execution of the Contract.

I
We have the honour to be,

Sir,

Your most obedient servant,

Address:—

GENERAL DIRECTIONS TO TENDERERS.

The Tenderers should distinctly understand:—

(1) The copy which they submit to the Municipality should be one superscribed "Original." This should be faultless in figures and entirely free from erasures, in default of which the Tender will not be considered.

(2) That they will be most strictly required to conform to the conditions of this Contract as contained in each of its clauses, and that the plea of "custom prevailing" will not, on any account, be admitted, as an excuse on their part for an infringement of any of the conditions.

(3) That no alteration or interpolation will be allowed to be made in any of the terms or conditions of this contract or in the Specification or in the Schedule, and that, if any such alteration or interpolation be made by a Tenderer, his Tender will, at the option of the Municipal Commissioner, either be rejected or be treated as if no such alteration or interpolation had been made.

(4) That the full Contract deposit must be made and the Contract must be executed on the day to be fixed by the Executive Engineer and intimated in writing to the successful Tenderer, and that a postponement of the deposit and of the execution of the Contract will, on no account, be permitted.

(5) The tenders are to be sent in before 1 P.M. (B. T.) on Friday, the 30th day of January 1925, and will be received by the Chief Accountant.

(6) Each tender must be accompanied by a deposit of Rs. 3,000 which will be returned to the Tenderer if his Tender is NOT accepted, but which, if the Tender is accepted, will be retained as security for the due signature of the Contractor in the accompanying form and for the making of the Contract Deposit equivalent to 5 per cent. of the Contract amount. One-twentieth of the amount of each bill passed for payment will be retained as further security to such amount as, added to the contract deposit, will not exceed 10 per cent. of the contract amount. It will be optional with the Contractors to make the Contract deposit aforesaid either (1) wholly in cash, or (2) wholly in public securities, or (3) partly in the one form and partly in the other. (See footnote.)

(7) The Contract Deposit will be redeemable in terms of the Contract.

(8) The Municipal Commissioner does not bind himself to accept the lowest or any Tender. The Municipal Commission reserves the right of accepting any tender in part.

(9) It is desirable that samples of 100 lbs. of coal in a sealed bag should be submitted at the same time as the tender. The sealed bag only to be delivered to the Deputy Executive Engineer, Mechanical Branch, Municipal Workshops, Foras Road.

(10) Each tender should be accompanied by a certificate from a well-known Analyst giving the Calorific Value, Carbon, Volatile, Ash and Moisture in the coal tendered for.

N.B.—In the interests of the Contractors the deposit on the Contract should be made in Government Paper or Municipal or Port Trust Bonds, or other Public Securities for, if so made, the Contract will, the Commissioner is advised, be chargeable with a stamp duty of Re. 1 whereas if not so made, it will have to bear an *ad valorem* stamp duty at the rate in force on the amount deposited.

Tender, dated _____ 192

Standing Committee's Resolution No. _____.

CONTRACT FOR THE SUPPLY OF COAL AT THE VARIOUS MUNICIPAL DEPOTS DURING THE YEAR 1925-26.

ARTICLES OF AGREEMENT made this _____ day of One Thousand
Nine Hundred and _____ between _____

inhabitants of Bombay carrying on business under the style and name of _____ for and on behalf of themselves and their heirs, executors, administrators, and assigns hereinafter called the Contractors (the singular covering the plural) of the one part, and _____, Esq., I.C.S., the Municipal Commissioner for the City of Bombay, on behalf of himself and his successor or successors in Office hereinafter called the Commissioner of the second part, and the Municipal Corporation of the City of Bombay hereinafter called the Corporation of the third part. WHEREAS the Commissioner in pursuance of the powers vested in him as Municipal Commissioner by the City of Bombay Municipal Act, 1888, of the Legislative Council of Bombay and in accordance with the provisions of the said Act, recently advertised notice inviting tenders for the supply of coal to the Municipality of Bombay during the year 192 -2 . AND WHEREAS the Contractors tendered for the supply thereof and their tender was accepted by the Commissioner on the terms and conditions hereinafter specified. AND WHEREAS the Contractors have deposited with the Commissioner the sum of Rupees _____

in _____ as security for the due and faithful performance of this contract on the part of the Contractors. Now these presents witness and it is hereby agreed and declared between and by the parties hereto as follows:--

First.—This contract shall commence from and after the *first April 1925* and shall continue in force (subject to the power of the Commissioner for the time being to determine the same previously as hereinafter mentioned) until *31st March 1926*.

Second.—The Contractors shall, during the continuance of this contract supply, and deliver coal of the description specified in the Schedule in monthly quantities to be arranged hereafter at the rate and at the places specified in the annexed Schedule which Schedule shall be deemed and taken to be part of this contract as if the same had been fully set out herein. The rate specified in the Schedule is fixed and not liable to vary by fluctuation in exchange. The coal shall be weighed by the Contractors at the destination before the representative of the Municipality and stacked by the Contractors squarely in the position pointed out by the Municipality.

Third.—It shall be at the option of the Commissioner to call upon the Contractors to increase or decrease the quantity of the coal as stated in the Schedule of each or any delivery to an extent (whether by way of increase or decrease) not exceeding 20 per cent. by giving to the Contractors notice in writing to that effect at least *two* weeks previous to the first day of the month in which such delivery is to be made or commenced and the Contractors shall thereupon increase or decrease as the case may be the quantity of the particular delivery to which such notice relates in accordance with the terms of the said notice. The value of every such increase or decrease, as the case may be, shall be paid or adjusted at the respective rates entered in the said Schedule.

Fourth.—Whenever the supply of coal of any particular delivery furnished by the contractors shall have amounted to 20 per cent. over the quantities specified in the said Schedule and any further quantity of coal is required for delivery during the continuance of this contract the Contractors shall have the first option of supplying the same at the market rate for the time being. Also in the case of Foreign coal whenever the supply of any particular delivery furnished by the Contractors shall have amounted to the quantity specified, in the said Schedule and any further quantity of coal of a similar country of origin is required for delivery during the continuance of this contract, the Contractors shall have the first option of supplying the same at the market rate for the time being. But in the event in either case of the Contractors refusing to supply the same as aforesaid, the Commissioner shall be at liberty to obtain the same from other parties without further reference to the Contractors and the Contractors shall not be entitled to any compensation on account thereof.

Fifth.—The coal supplied by the Contractors in accordance with this Contract shall be in conformity in all respects with the following particulars:—

- (a) The coal must be of best quality, either handpicked or screened and be free from shale or other deleterious foreign matter. It must be fresh coal. "Weathered" coal will not be accepted.
- (b) Coals from different Properties or Mines are not to be mixed.
- (c) Coal which is not designated as "Rubble" coal shall be of fair size and shall not contain more than 15 per cent. by weight of slack as ascertained by passing a fair sample or samples over a screen of $\frac{3}{4}$ inch mesh, the screenings being designated as "slack."
- (d) Coal designated as "Rubble" coal shall all pass through a screen of 3 inch mesh and shall not contain more than 10 per cent. by weight of slack as ascertained by passing a fair sample or samples over a screen of $\frac{3}{4}$ inch mesh, the screenings being designated as "slack."
- (e) The guaranteed calorific value of the coal specified in the Schedule will be 7,000 calories. In case of decrease in the calorific value the coal will either be rejected or paid for at a rate reduced in proportion to the decrease in the guaranteed calories. The Contractors shall have no claim for a higher rate for coal giving more than the guaranteed calories. The Municipality may, whenever they think fit, send a representative sample of coal taken at the place where coal is delivered and stacked, to be analysed by the Government or any expert analyst in Bombay nominated by the Municipal Commissioner. Should the calorific value of the coal analysed be found to be less than the guaranteed calories the contractors shall bear the cost of analysis.
- (f) The analysis of coal to be as follows:—
 - Carbon not less than
 - Volatile not less than
 - Ash not more than
 - Moisture not more than

Sixth.—If any coal supplied by the Contractors in accordance with this contract shall be considered by the Commissioner or other officer appointed on that behalf to be not in conformity in any respect with the particulars mentioned in the preceding clause or not the best of its kind, the Commissioner may reject such coal. The Contractors shall on demand in writing by the Commissioner remove the same at their own expense and if they shall neglect to do so within such period as may be named in the demand, the Commissioner may cause such rejected coal to be removed or otherwise disposed of at the Contractor's risk and the Contractors shall pay all expenses incurred in or about such removal or disposition.

Seventh.—In case the Contractors shall, at any time during the continuance of these presents, fail to supply coal of the description and quantity and at the times specified in the annexed Schedule, or in case the Contractors shall fail to remove as aforesaid and replace within 20 days after the date of demand for removal any coal that may be rejected as hereinbefore provided with other of approved quality, the Commissioner shall be at liberty (subject to the proviso hereinafter contained) to forthwith purchase in the market, in lieu thereof, and at the contractor's risk and expense, other coal of the same or of other approved description or quality, and the difference between the cost of coal so purchased and the Schedule rate of the coal contracted for and all expenses thereby incurred or in connection therewith shall be deducted from the deposit made by the Contractors under this or any other contract between the Contractors and the Corporation. PROVIDED however that in case the Contractors shall at the time of such failure produce proof to the satisfaction of the Commissioner that such failure was due to a cause or causes altogether beyond the Contractors' control and was in no way attributable to any neglect or default of the Contractors, the Contractors shall be allowed the first option of supplying other coal of approved description and quality at market rates and in case Contractors shall refuse or fail to forthwith exercise such option, the Commissioner shall be at liberty to obtain the coal elsewhere without further reference to the Contractors who shall not be entitled to any compensation on account thereof. In any case referred to in this clause it shall be optional with the Commissioner either to require that the Contractors shall deliver the coal as to which there has been such failure, or such lesser quantity as he shall think fit, at the rate or rates contracted for as soon as the cause or causes (if any) of such failure have been removed or to cancel the delivery thereof.

Eighth.—The Commissioner or any Agent appointed on that behalf shall have power to inspect the Indian Coal while in course of being made ready for loading into railway wagons at the colliery and may, on any such inspection, direct the Contractors not to load any coal which in the opinion of the Commissioner or his aforesaid Agent shall not be in conformity with the specifications of this contract and the Contractors shall comply with every such direction. Sea-borne coal shall be the contents of one or more complete holds of the steamer. No coal though of the same description as that contracted for, intended for other consignees shall be permitted to be contained in the same hold or holds.

Ninth.—If any coal be offered for delivery or delivered in a heated condition or proved to be of quality or description other than specified in this contract, the Commissioner or other officer appointed on that behalf may demand a survey and in such case the Contractors shall arrange for the survey of the coal by a certified Surveyor to be approved by the Commissioner whose award in regard to deductions to be made on that behalf shall be final and binding on the contractors. The cost of survey shall be met by the Contractors in such cases as the Surveyor awards any deductions and by the Corporation in such cases as no deduction is awarded. All coal delivered between June 15th to September 30th (both days inclusive) will be deemed to be wet coal and a deduction of 2 per cent. will be made from the coal weighed during this period as wet allowance without prejudice to the Municipal Commissioner's absolute discretion to reject such coal.

Tenth.—The Contractors shall, without delay, present to the Deputy Executive Engineer, Mechanical Branch, separate bills in triplicate for the coals as weighed at each dépôt in a fortnight together with a receipt by the officer in charge of the Dépôt therefor; in the absence of the said receipt no bill shall be passed for payment. If the coal delivered has been finally approved and accepted but not otherwise, the Contractors shall, subject to clause 5 (e) receive payment according to the rates specified in the annexed Schedule to the extent of nineteen-twentieths of the amount due on the quantity of coal delivered subject to such further deductions as may be

permissible under this contract, the remaining one-twentieth being retained by the Commissioner as extra security for the faithful performance of this contract, subject to the same terms and conditions as apply to the original deposit. PROVIDED HOWEVER that the one-twentieth retentions shall cease as soon as the aggregate amount thereof when added to the value of the original deposit shall be equal to 10 per cent. of the contract amount.

Eleventh.—In case of failure on the part of the Contractors at any time during the continuance of this contract to comply with any of the conditions herein contained or in case of any breach whatsoever of any portion of this contract the Commissioner for the time being shall be at liberty absolutely to determine the same by giving the Contractors one calendar month's notice in writing of his intention so to do and in such case the said deposit together with the one-twentieth of the amount of each bill retained as specified in the preceding clause shall be absolutely forfeited to the Corporation as liquidated damages for such failure or breach of contract.

Twelfth.—These presents and every clause, matter and thing herein contained shall cease and determine on the *31st day of March 1926* (unless the same shall have been previously determined by the Commissioner as hereinbefore provided) except only as to the rights and remedies of the parties hereto in respect of any clause or thing herein contained which may have been broken or not performed.

Thirteenth.—The said deposit and the one-twentieth of the amount of each bill retained as specified in the tenth clause shall on a written application being made by the Contractors from time to time be invested in such securities as may be approved by the Commissioner. All charges in connection with such investments including deposits, etc., fees shall be borne by the Contractors.

Fourteenth.—The said deposit and the retentions made from each bill as specified in the tenth clause of this contract shall at the expiration of this contract be returned to the Contractors unless the same shall have been forfeited as hereinbefore mentioned and all charges for the safe custody and withdrawal of and for the collection of interest on the said sum deposited as security money and on the retention moneys if invested in Public Securities as provided by the preceding clause shall either be paid by the Contractors or be deducted out of any moneys that may be or become due to the Contractors under this or any other contract between the Contractors and the Corporation.

Fifteenth.—Every receipt for money which may become payable or for any security which may become transferable to the Contractors under these presents shall if signed in the partnership name by any one of the Contractors be a good and sufficient discharge to the Commissioner and Corporation in respect of the money or security purporting to be acknowledged thereby and in the event of the death of any of the Contractors during the pendency of this contract, it is hereby expressly agreed that every receipt by any one of the surviving Contractors shall, if so signed as aforesaid, be a good and sufficient discharge as aforesaid. PROVIDED that nothing in this clause contained shall be deemed to prejudice or affect any claim which the Commissioner or Corporation may hereafter have against the legal representatives of any Contractors so dying or in respect of any breach of any of the conditions hereof. PROVIDED ALSO that nothing in this clause contained shall be deemed to prejudice or affect the respective rights or obligations of the Contractors and of the legal representatives of any deceased Contractors INTER SE.

Sixteenth.—The expense for stamping and executing this contract and all charges for commission and brokerage on the purchase of securities made for the Contractors and of deposit and withdrawal fees, etc., in respect of securities lodged by the Contractors shall be paid by the Contractors.

Seventeenth.—If at any time any question, dispute or difference shall arise between the Commissioner and the Contractors upon or in relation to

or in connection with this contract, either party may forthwith give the other notice in writing of the existence of such question, dispute or difference and such question, dispute or difference shall be referred to arbitration of a person mutually agreed upon. The award of the Arbitrator shall be final and binding on both parties.

IN WITNESS WHEREOF the Contractors have hereunto set their hands and the seal of the Corporation has been hereunto affixed.

Signed and delivered by the Contractors.

in the presence of

Signed by the Municipal Commissioner
in the presence of

The common seal of the Municipal Corporation of the City of Bombay was affixed
on the 192

in the presence of

Two members of the Standing Committee
of the Municipal Corporation of the City of
Bombay

Witness.

Municipal Secretary.

Contractors.

Trading under the name and
style of

Municipal Commissioner.

Executive Engineer.
Municipality.

Contract examined with the Resolution No. dated
of the Standing Committee, etc., and found correct.

Chief Clerk and Accountant.

COAL.

SCHEDULE.

Description.	Approximate quantity in tons.	Rate per ton.	Amount.
(1) Coal _____ *			
to be supplied and delivered at Love Grove Pumping and Compressor Stations, Worli, also Outfall Works, Worli .	9,000		
(2) Coal _____ *			
to be supplied and delivered at any place in the different Wards of the City.	3,000		

The Contractors specifically agree to the following conditions:—

- (a) The rate includes the cost of supplying, carting, delivering, weighing and stacking at the Municipal Dépôts.
- (b) The quantities mentioned are approximate and subject to increase or decrease not exceeding 20 per cent. at the discretion of the Engineer.
- (c) It shall be at the option of the Municipality to accept any of the items or all of them.
- (d) Coal shall be supplied and delivered in such monthly quantities as may be advised from time to time.
- (e) Kind of coal should be stated at * above.

Witness: ————— (Signatures) {

Trading under the name and style of

Contractors.

Witness: —————

Municipal Commissioner for the
City of Bombay.

Executive Engineer, Municipality.

Statement showing cost at 1,000 calories of coals

Tender o.	Kind of Coal.	Calorific value. Calories.	Price per ton at Worli.
			Rs. A. P.
1	Jamnatant	Not stated	3 12 0
2	Bengal Coal	7,632	22 11 0
3	African Coal	7,000	21 8 0
	Bengal Coal	6,800	20 0 0
	C. P. (Pench) Coal	6,180	..
4	Central Provinces Coal	5,739	18 8 0
5	Northern Navigation	About 7,000	24 6 0
	Durban Navigation	About 7,200	24 0 0
	Natal	About 7,400	23 14 0
	Bengal	6,928	20 3 0
	C. P. Coal	6,473	18 7 0
6	Suratant	6,500	22 3 0
	Rewa	6,000	21 6 0
7	Bengal Coal Khas Jayrampur	6,750	23 4 0
8	Cambatas Pench	6,300	18 8 0
9	Bengal	7,000	21 8 0
10	Bengal	7,001	19 13 0
	Newton Chikli, C. P.	6,301	..

URE B.

tendered to the Bombay Municipality, 1925-26.

Price per ton at various depôts.	Calorific value.	Price		REMARKS.
		at Worli.	at various depôts.	
Rs. A. P.	Rs.	Rs. A. P.	Rs. A. P.	Deposit not paid; f.o.r. colliery.
..	
22 11 0	1,000	2 15 7	2 15 7	
21 8 0	1,000	3 1 2	3 1 2	
20 0 0	1,000	2 15 1	2 15 1	
18 0 0	1,000	..	2 14 7	
18 15 0	1,000	3 3 7	3 4 10	
24 6 0	1,000	3 7 9	3 7 9	
24 0 0	1,000	3 5 4	3 5 4	
23 14 0	1,000	3 3 7	3 3 7	
20 3 0	1,000	2 14 7	2 14 7	
18 7 0	1,000	2 13 7	2 13 7	
22 3 0	1,000	3 6 7	3 6 7	
21 6 0	1,000	3 9 0	3 9 0	
23 4 0	1,000	3 7 1	3 7 1	
18 8 0	1,000	2 15 0	2 15 0	
21 8 0	1,000	3 1 2	3 1 2	
20 4 0	1,000	2 13 3	2 14 3	
17 15 0	1,000	..	2 13 7	

Captain W. G. A. FOX, of Messrs. Fox & Hodgins, Bombay.

WRITTEN STATEMENT.

E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—I have had experience of coals other than Indian coal, and with particular regard to African coal am of the opinion that Indian coal can compete if careful regard to grading and mixing and the elimination of shale, stone and dust is exercised, the latter being a very important point seeing that carelessness in these matters has been the cause of much complaint and has contributed very largely to the acquisition of the poor reputation which Indian coal has earned in Bombay.

19. **C.i.f. prices of Indian coal at different ports.**—Assuming that this question refers to Indian coal, with the pit-head price of coal at Rs. 8 and the wagon (*i.e.*, railway receipt) weights accepted, then in my opinion the c.i.f. Bombay price would be Rs. 21, assessing sea-freight at Rs. 7-8-0; but in actual practice an additional 8 annas would have to be added for wastage.

20. **Prices.**—African coal is at present being offered at the following c.i.f. Bombay rates:—

Natal—

	Shillings.	Rs.	A.	P.
St. George Burnside	30	20	3	0
Durban Navigation	29-6	19	13	0
Northern Navigation	29-4	19	11	0

Transvaal—

Witbank	28-6	19	1	0
-------------------	------	----	---	---

21. **How competition can be met.**—In my opinion the competition of coal other than Indian with Indian coal could best be met by the co-operation of all parties concerned with the coal industry, *i.e.*, Colliery-owners, Managing Agents, Railways and Port Authorities with a view to such steps being taken as will result in the possibility of reducing costs in such manner as will enable Indian coal to compete with regard to price and also with regard to quality and condition of shipments. It seems to me that it lies with Owners and Managing Agents to see if raising costs can be reduced, and also to take such steps as will result in nothing but good clean coal being despatched of the actual quality and description called for.

The Railways should give all such facilities as may be practicable by way of freight-rates, wagon-supply, etc. Port authorities should improve the methods of handling both at shipping and discharging ports with a view to the stopping of the destructive effects on coal involved in the existing methods of handling. I also advocate the establishment of sworn weighmen under the jurisdiction of either respective Port Trusts or Chambers of Commerce instead of the employment of promiscuous men having no responsibility to any authority whatever and consequently open to misfeasance if tempted.

I am also of the opinion that the appointment of a recognised Combustion Engineer at delivery Ports would assist in the re-establishment of Indian coal. Such an official would be available to advise as to the necessary combustion conditions to be established in order to achieve the best possible results, and he would also be a valuable referee as between Supplier and Consumer.

23. **Special assistance to other coals competing with Indian.**—To the best of my knowledge the shipment of African coal to India is at present being facilitated by way of a rebate on export coal amounting to the equivalent of about Rs. 5 per ton, that rebate impinging on the coal before shipment and not affecting the steamer freights.

There is too the question of the rate of exchange which at present is an advantage to African coal amounting to roughly Re. 1-4 per ton and as an indication of the effect of these conditions I append a comparative statement showing the imports by sea of African, Indian and other coal in Bombay during the past 4 years :

----	1921.	1922.	1923.	1924.
Indian	592,533	75,427	76,158	182,831
African	429,826	190,891	228,280	211,607
United Kingdom, Australia and Japan .	483,101	606,167	107,900	61,710

(ORAL EVIDENCE—FEBRUARY 5TH, 1925.)

General.—I have been connected with the Bombay coal trade for 15 years. For 14 years I was Manager for Messrs. Cory Brothers. Now I have started a general coal business of my own. My firm has no depôt on the Bunder. We do business direct with suppliers in Calcutta.

Since I started on November 11th, I have handled just under 15,000 tons; that is Bengal coal, H. V. Low's, Sarda & Co.'s and various other firms'.

E. Comparative merits and prices of Indian and other coals.

Quality of Bengal coal in Bombay.—Before the war, when I was with Messrs. Cory Brothers, we handled hundreds of thousands of tons of Bengal coal and, as a rule, there were no complaints. Occasionally of course there were complaints but I cannot say that they were very serious. After the war things were very different. The change began during the war when wagons were loaded up with everything that offered, the railway receipt was sold, and the coal despatched anywhere. Naturally the quality deteriorated. Now-a-days despatches are very satisfactory, far more so than they were immediately after the war. They are partly sea-borne and partly rail-borne.

Comparison of rail-borne and sea-borne coal.—Taking the cost of the coal at Rs. 8 per ton at pit-head and assuming sea freight at not more than Rs. 7-8-0 to Rs. 8, sea-borne coal has always an advantage over rail-borne coal to the extent of between Re. 1-8-0 and Rs. 2 per ton. Every reduction in sea freight makes this advantage bigger. At present the difference is about Rs. 2-8-0 per ton.

As regards condition, rail-borne coal has a quite appreciable advantage especially as regards the amount of dust and small coal. Jharia coal suffers more than Raniganj because it is much softer—take 14 or 15 Jharia, for example: they are highly bituminous and very friable.

(To Mr. Legge.)—The legitimate wastage is greater by sea than by rail. The percentage of waste on rail-borne coal depends on the conditions under which the coal is loaded and weather, etc., during transit. In the rains if the coal gets wet while being loaded and on transit meets with dry weather, you will get at Bombay a shortage equal to the amount of water evaporated off it. Frequently again there will be very heavy wastage through theft; often no other explanation is possible. I can recall no case in which the shortage touched 10 per cent. but I have known it to reach 6 per cent. or 7 per cent. The general average would not exceed 3 per cent. to 5 per cent.

18. Comparative merits.—In my opinion Indian coal can quite well compete with South African coal provided that due regard is paid to the elimination of shale stone and dust and that the coal called for under any particular indent is absolutely despatched in the best possible order and condition from the colliery.

20. Prices.—The price for Bengal coal corresponding to those given for South African in my written reply would to-day be not less than Rs. 21 c.i.f., with favourable conditions as to sea-freight. That is for absolutely first-class coal, costing Rs. 8 at pit-head. To get back the Bombay market the price must come down Rs. 2 at least, i.e., Rs. 1 below South African. Once quality has been established and maintained, Bengal coal may get the same price as South African; but till then it is useless to expect it.

21. How competition can be met.—The Combustion Engineer whom I advocate in my written statement would be a man who had studied the combustion of coal and conditions of combustion. His point of view would differ from that of an analyst, in that he would be a practical man. There are Combustion Engineers in Bombay; for example Messrs. Duncan Stratton have one; that is an engineering firm but the man to whom I refer has made a special study of coal-combustion. You need a man who can go to a boiler-plant and see if the conditions under which the coal is being burnt are such as to obtain the best possible results. My idea is that he would be officially appointed by Government and hold a recognized position.

I advocate sworn weighmen because the men who now do the work are entirely promiscuous, without responsibility to any one. There have been cases within my personal experience where there has been misfeasance in regard to this weighing. This is a very important point both to the supplier and to the consumer; for if the weighmen are open to influence they may favour either the supplier or the receiver. This is a handicap to all impartially. (*Vide copy of letter attached below.**)

F. Grading, inspection and certification of coal.

I do not agree at all with sale on a guarantee of calories, because calorific value is so liable to variations. I have known an instance when the same coal on six different analyses varied 1,200 calories.

I should favour a system of certificates that coal comes from a particular colliery and seam. As doubtless you are aware this is the general practice in England and Wales.

The only trustworthy analysis is one taken from the whole of the working face: it may be a matter of 8 or 10 tons, broken down and quartered, and again broken down and quartered till a manageable sample is left. That is the only way to take a real analysis.

I do not favour sale on calories. I should be more inclined to favour a guarantee of carbon-value and of ash-content; ash is particularly vital because a high ash-content means low calories and low ash-content means high calories.

** Captain Fox subsequently put in the following letter on the subject of weighment in Bombay, together with a supplementary note.*

Letter, dated 13th February 1925, to the Manager, Land and Bunders, Bombay Port Trust.

Referring to your No. 33-14084, dated 6th instant, we beg to express the following views:—

1. Whether the present system of weighing is unsatisfactory.—We consider that it is unsatisfactory for the reason that at present the weighing is done by men who have no responsibility to any authority and they are, consequently, open to misfeasance if tempted. We may say that in our experience we have known cases where we have had very grave doubts in regard to the weighing; but where the men involved are not amenable to any authority or control it is a difficult matter to bring home any charge of misfeasance against them, whereas if the men were licensed and sworn in, the controlling authority would have the right to traverse any cases where there

might be cause for suspicion, apart from the moral effect involved in knowing that there is an authority holding that right and on whom one's employment depends.

2. Whether the establishment by the Port Trust of a system of weighment would prove satisfactory.—We think yes, our reason for so thinking being the large turnover of weighed coal which takes place not only *ex* steamers but also deliveries given by weighment on the Port Trust Bunders and Coal Depôt, our suggestion being that the last mentioned should be included in any arrangements which may eventually be made and we make that suggestion because it would go a long way towards cleansing the coal trade in general of a great deal, if not all, of the unfair manipulations which are now very prevalent.

3. What would be the likelihood of continuous employment of such an establishment as entertained by the Port Trustees.—In our opinion, and keeping in view the present anticipated increase in the demand for Bengal coal, there is every likelihood of continuous employment for a staff of licensed weighers, provided that staff is kept at a reasonable number.

Another important matter too is the question of standard weights bearing the seal of a regularly constituted authority, all weights in use being subject to periodical test by that authority.

Note.

The institution of licensed sworn weighmen should connote the compulsory use of standard weights, such weights to be subject to the test and inspection of some constituted authority as is the case in the United Kingdom where all weights and measures are periodically tested and inspectors appointed under the Weights and Measures Act who have at all times the right to test weights and measures. To the best of my knowledge weights here are never inspected and prolonged use, apart from any question of deliberate intention, must necessarily result in considerable attrition, and I may say that I have known cases on board steamers where argument has arisen with regard to the correctness of weights in use. Such argument could never arise if weights were standardised and stamped by the competent authority.

In the case of imported weights, at any rate from the United Kingdom they are doubtless correct when received, but the adjustment to correct weight is arrived at by the insertion of lead plugs or fillings, therefore there is every possibility of such adjustment being disturbed either naturally from prolonged use or otherwise. It might be argued that a light weight would alternately favour buyer or seller, but one cannot accept such an argument as being otherwise than most unsatisfactory even if all other conditions and intentions were quite honest and moreover the adjustment of a known light weight by means of a lump of coal or stone can only be described as being something more than unsatisfactory.

CHOONILAL GIRDHARILAL, Esq., of Messrs. Choonilal Harilal & Coy., Coal Merchants, Bombay.

Extract from letter dated 2nd February 1925.

I am enclosing herewith a copy of my article published on 19th February in 1924 when it was resolved by the Imperial Legislative Council to place the countervailing duty on Natal coal for your information. I am also enclosing herewith a tabulated statement of rates for Bengal, Natal and Welsh current during 1921, 1922, 1923 and 1924 in Bombay Market and also one of landing charges during the same period.

2. I have to point out that during the war and after, Bengal coal ruled the Bombay market. The quality supplied during the period was so poor and

the consumers were so greatly dissatisfied that some of them were forced to go to oil or electricity whichever was the most convenient to them and consequently local consumption in the Bombay market has been considerably reduced. Moreover as Bombay is one of the coaling ports there is a great deal of demand for bunker coal. The poor quality of Bengal coal supplied, during the war and after, to Shipping Companies was also one of the factors which forced them to take their bunkers elsewhere or in foreign coals. During 1920 there was big business done in Bengal coal by sea and the quality which we received then, was so poor that some of our best constituents broke off relationship with us which was of considerably long standing. In 1921 when foreign coal first appeared in the Bombay market consumers paid fabulous prices which you will see from the statement enclosed; because they were then greatly dissatisfied with the Bengal coal they then used to receive, and, from then onwards, foreign coal captured this market very quickly and it even now holds such a great influence over this market that even at comparatively equal relative prices consumers are reluctant to buy Bengal coal. Really speaking colliery proprietors in Bengal have themselves to thank for the position in which they are placed at present.

3. If I am not wrong, I think, before the war, railway freight from colliery to Bombay was Rs. 9-14 per ton. It was slowly and gradually increased to Rs. 15-4 as it is at present. You will, therefore, see that railway freight is one of the greatest stumbling blocks to reintroduction of Bengal coal. I must admit that though railway freight was cheap before the war, all coal from Bengal used to be imported by sea because it was cheaper than the railway freight then charged. Even at present Sea-borne coal is cheaper than Rail-borne coal but the prices of First Class Bengal coal even though imported by sea are comparatively higher than the relative prices of foreign coal. It should also be admitted that there were then lot of trampships carrying coal cargo between Calcutta and Bombay which are at present to a certain extent non-existent.

4. Under the circumstances I think there are two courses open one to reduce freight and the other to give bounty on exported coal to enable Bengal to capture lost markets for their Coal but the third course suggested by some to enhance import duty on foreign coal is, to my mind, suicidal, as it will reduce Bombay requirements for the reason that, if prices are higher here in comparison with other coaling ports, it will be the natural outcome that Steamship Companies will take their bunker requirements at the cheapest ports when it will frustrate the object which we desire to achieve.

5. I cannot too greatly impress upon the Bengal Coal Companies the absolute necessity of supplying coal of First Class quality, if we are to successfully compete with British and Natal coal, which always maintain its uniform standard.

DUTY ON NATAL COAL.

THE SITUATION EXAMINED.

19th February 1924.

TO THE EDITOR OF THE TIMES OF INDIA.

Sir,—With reference to the Resolution of the Imperial Legislative Council for placing a countervailing duty of Rs. 4-3-0 on the import of Natal coal into Bombay in order primarily to increase and encourage the consumption of Bengal coal on the Western side of India, it seems to me, after some years' experience in coal in India, that a large number of those honourable members who voted for the increase of duty are unaware of the facts of the matter and merely followed the lead of the spokesmen who looked on the question from the biased point of view. I take this opportunity of placing before the

public a few figures from which they can judge for themselves as to the actual facts of the case.

In pre-war days all coals were shipped (even those for railways with about 125 miles from a port) by sea. The cost of Deshurghur coal was worked out on the following basis.

	per ton.
	Rs. A.
Cost of coal—average	4 8
Freight to Docks and Port Trust Rs. 3-4 less As. 10	2 10
Steamer freights Rs. 4-8 to Rs. 5-8 average	5 0
Insurance shortage and Commission	0 14
C.i.f. Price	13 0

The rates for Deshurghur to-day:

	Rs. A. P.
Contracts are in existence from Rs. 13 to Rs. 16 per ton f.o.r. say	12 0 0
Freights Rs. 4-8-6 Port Trust Rs. 1-8=6 0 6 less rebate. 1 0 0	5 0 6
Steamer freights	9 0 6
Commission	0 14 0
C.i.f. Price	26 15 0
If first class Jherriah coals are taken 13—14—15 and 17 at say	9 0 0
With charges as above	14 14 6
The C.i.f. Price=	23 14 6
Similarly if first and second classes Bengal are mixed the average is say	7 1 6
With charges as above	14 14 6
This was the price of a recent cargo C.i.f.	22 0 0

COAL BY RAIL.

The pre-war rate of rail freight for coal, as far as my memory serves me, was about Rs. 9-14-0 per ton, and this was hardly ever used owing to wagon shortage. The present rate is Rs. 15-4 per ton with a Port Trust charge of Rs. 0-5-0=Rs. 15-9-0. This means

	Rs. A. P.	
Deshurghur at	27 9 0	f.o.r. Bombay.
First Class Jherriah at	24 9 0	"
Mixed Jherriah at	22 10 6	"

Very much subject to "Wagon Supply."

Good qualities of Natal coal are to-day quoted at 33s. c.i.f. at 1-5 equal Rs. 23-5-0 or with duty at 0-8-0. Rs. 23-13-0 c.i.f.

Cardiff coal first quality all large is quoted at 42s. and at present exchange means Rs. 29-10-0 and duty 0-8-0 equals Rs. 30-2-0 c.i.f.

Landing on Bunder is now Rs. 1-8-0 a ton, and delivery to mills 3-8 say Rs. 5, in all.

The position therefore resolves itself as far as the mills are concerned as follows:—

	Rs.	A.	P.
First Class Deshurghur, Mill Delivery . . .	31	14	6
First Class Jherriah, Mill Delivery . . .	28	14	6
Mixed Jherriah, Mill Delivery . . .	26	14	0
Natal coals, Mill Delivery . . .	28	13	0
Witbank Transvaal, Re. 1-4 less . . .	27	9	0
Cardiff coals, Mill Delivery . . .	35	2	0

As far as can be ascertained from Mill consumption report, one ton of Cardiff goes as far as 1½ tons of Natal coal, 1½ tons of Deshurghur coal and 1½ tons of Jherriah coal.

It is curious to remark here that the steamer freight from Calcutta is Rs. 8-8-0 to Rs. 9 and freights from Natal, which have been 12 to 15 shillings and only lately gone to the latter whilst Cardiff is at present 13 shillings with heavy Suez Canal dues to pay. Comment on this matter is not necessary.

From figures given above it is easy for a millowner to see which suits him best. If the proposed heavy duty is placed on Natal then some Cardiff coal and only a leavening of Bengal coal will be required by the Bombay market for an economical burning mixture. Even if a mixture is needed then Pench, which can be landed in Bombay at about Rs. 19 against Jherriah at Rs. 28-14-0, is likely to make its presence felt. In my humble opinion, therefore this countervailing duty specially imposed to assist the consumption of Bengal coal will not materially assist in doing so.

The real reason why Bengal coal has lost popularity on the Bombay side is in my opinion that for want of proper shipping facilities any coal that comes along first is posted into the steamer no matter what it is, Lay days being used up and the steamer having to sail to time. Some three lakhs of tons of Natal coal was booked by railways and mills in 1913-14 even, owing to uniform quality of every cargo and only the advent of war stopped Bengal coal from being run out of the market. The start of the war revived dozens of second and third class collieries on the point of closing up, and during and since the war, when the steamers practically stopped running, the better class coals were picked up by Bengal buyers and all the rubbish of Bengal was literally thrown to Bombay by thousands of tons. Having bitter recollections of this treatment, the moment foreign coals came in again buyers clamoured for them knowing that the standard of Cardiff and Natal coal shipped was invariably good and uniform. I would therefore strongly urge the members of the Legislative Assembly carefully to consider the facts as stated above before finally passing a law to encourage the use of Bengal coal with a countervailing duty which will not have the effect anticipated.

The only real assistance that can be given to Bengal for coal is railway freight on a cheaper basis. Even if the rate of Rs. 11-4-0 in vogue during the first two years of the war was revived it would have a most appreciable effect, the more so if colliery owners would put their houses in order and guarantee the calorific value and standard of their coals and in the case of Jherriah coals that the coal of the seams contracted for was actually despatched. This means a greater wagon supply and until therefore the Government can supply the wagons nothing can be done. Finally in my humble opinion I feel that if the countervailing duty on Natal coal as suggested is imposed, it simply means that Cardiff comes into greater use and not more Bengal.

CHOONILAL HARILAL,
Coal Merchant,
Green Street,
Bombay.

Rates per ton, c.i.f. Bombay in shillings.

		1921.	1922.	1923.	1924.
Welsh	{ In the beginning . . .	74	47	41 throughout the whole year.	{ 41 40
	{ In the end . . .	47	41		
Natal	{ In the beginning . . .	60	37	32	30
	{ In the end . . .	37		30	28

Rates per ton, c.i.f. Bombay in rupees.

		Rs. A.	Rs. A.	Rs. A.	Rs. A.
Welsh	{ In the beginning . . .	58 0	36 13	29 13	28
	{ In the end . . .	35 13	32 2	29 13	27 6
Natal	{ In the beginning . . .	47 0	29 0	23 4	20 8
	{ In the end . . .	29 0	25 0	21 13	19 3
Bengal—Through the whole year		36 8	Nil.	Nil.	{ 20 8 Half 1st and 18 4 Half 2nd class. Second class Bengal.

Landing charges at Bombay.

		Rs. A.
1921		3 8
1922		3 0
1923		2 8
1924		2 0

Rate per ton on bunder.

		1921.	1922.	1923.	1924
		Rs. A.	Rs. A.	Rs. A.	Rs. A.
Welsh	{ In the beginning . . .	61 8	39 13	32 5 through- out the whole year.	{ 30 2 29 6
	{ In the end . . .	40 5	35 2		
Natal	{ In the beginning . . .	50 8	32 0	25 12	22 8 beginning.
	{ In the end . . .	32 8	28 0	24 5	21 3
Bengal—Through the whole year		40 0	Nil.	Nil.	{ 22 Half 1st and 20 half 2nd class. All 2nd class.

**CHUNILAL GIRDHARLAL, Esq., of Messrs. Chunilal Harilal & Co.,
Bombay.**

ORAL EXAMINATION—FEBRUARY 4TH, 1925.

General.—In 1921, the first year when foreign coal really came into the Bombay market, my firm handled 300,000 tons of it as well as from 15 to 20,000 tons of Bengal coal.

In 1922 we handled no Bengal coal and 200,000 tons of foreign coal: the reduction was due to the Railways going out of the market.

In 1923 the amount was further reduced to 100,000 tons of foreign coal.

In 1924 the amount was about the same, and we took besides three cargoes of Indian coal, *i.e.*, between 16 and 17,000 tons. The first of these was half first-class and half second, 13, 14, and 15 seams; this was the consignment sent on the Katherine Park by the Calcutta Coal Combine. The second was second class coal from Messrs. H. V. Low. And the third was a mixture of first and second-class, from Messrs. H. V. Low.

In 1921 it was first-class coal that we had—Kilburn's Jamadoba, and we were satisfied with it. The Katherine Park consignment was not up to the mark of the Jamadoba coal: a mixture was sent because first-class coal could not be sold at less than Rs. 24 whereas this mixture was priced at Rs. 20-8 and Bombay consumers wanted it to mix with Natal coal. We are not satisfied with the supplies of Indian coal, because we are not getting good quality. Before this in 1920-21 I purchased a large quantity of first-class and second-class coal not mixed: I was not satisfied: three out of seven cargoes that I got from Kilburns were unsatisfactory.

I have not imported any Bengal coal since I got the three cargoes: I burnt my fingers over the H. V. Low coal. I am now trying what can be done but the price is high at present.

Prices.—Natal coal is now quoted February shipment at 29s. to 30s. c.i.f. or, at 1s. 6d. exchange, Rs. 20 c.i.f., to which must be added for import duty (paid by the importer) a further 8 annas.

As contrasted with this first-class Bengal coal was accepted by the Port Trust according to what I have heard at Rs. 21 delivered on to Port Trust Bunder: that was Victoria and Baraboni of Messrs. Balmer Lawrie & Co., and the quantity involved was 50,000 tons.

Foreign coal is uniform and of standard quality. But we see Dishergarh, Baraboni, Victoria, all these first-class coals, to be equal to Natal coal, if we could only get them of a standard quality.

My firm tendered for the Port Trust contract MacNeills' Dishergarh and Natal coal also at Rs. 20-8-0 delivered on to Port Trust Bunder. I tendered at the same price for both because I was considering the rate for the whole year, as contrasted with the rate which I have mentioned for February shipment only.

Sale of coal on guarantee of calories.—Purchase on calorific basis is not, from my point of view, satisfactory. There is no certainty about the calories of coal from any colliery proprietor. I tried to get a guarantee of calories from London and Newcastle: they refused. My experience is that on one cargo you may have a difference of 200 calories. It is the same with any coal that you like to test—Natal, English or Welsh alike: give ten separate samples of the same coal to an analyst and the results of analysis will all be different. The only real test of a coal is to burn it in a boiler.

I guaranteed 7,000 calories for the Dishergarh and Natal coals. The Natal exporters give no guarantee: we take the risk. As to Bengal coal some colliery firms do give the guarantee, but others do not.

I consider purchase on calories not to be so satisfactory as it ought to be in theory. I have not actually sold on this basis. I tendered once to the

Municipality and once to the Port Trust on it. Last year one of the coal merchants guaranteed for Bengal coal 7,600 calories with a 5 per cent. variation to the Municipality. The form of contract forces one to guarantee a higher figure than one is likely to attain, because no benefit is derived under it if the coal delivered is better than the figure guaranteed.

Number of coal-firms in Bombay.—I should say that there are about 20 or 25 firms who have depôts on the Bunder. Besides there are office-firms who buy cargoes and sell to us: you may take their number as ten. Offices such as Grahams, Killick Nixons, etc., do not have depôts; they sell a cargo outright.

Bunkering at Bombay.—The falling off of bunkering in Bombay after 1921 was due to the rise in the price of coal. Before that Bengal coal was so cheap here that English companies bunkered enough coal in Bombay to take their ships from Bombay to England and back. Now, on the contrary, foreign coal is so much cheaper that ships bunker here only as far as the next bunkering-port. Last year our bunkering fell off greatly because our prices were above those at Karachi or Colombo. If a steamer can go to Karachi or to Calcutta safely, *i.e.*, without risk of running short of coal, it will go and fill up there.

How competition can be met.—I am not in favour of a duty. We want cheap coal to compete with Port Sudan and Port Said in bunkering. The duty now is 8 annas: if it is put up to Re. 1 or Rs. 2 it smashes our bunkering which is our chief coal business in Bombay, I think, now that the mills are going over to oil and electricity. Bombay is not the only port with coal business which Bengal has to catch. If Government intend to help there are only the two courses open which I have indicated in my written reply. I am not in favour of either of them for its own sake. A third course would be to supply first-class coal. Bombay will get the coal that it wants, foreign or Indian, and it is immaterial to the middleman which of the two it takes.

If the price of coal in Bombay is Rs. 2 a ton higher, then ships will bunker at Port Sudan or at Marmagoa which also would be cheaper than Bombay.

Bengal coal must come down in price. At present the consumer is nervous but if first-class Indian coal were once sold at a really cheap rate it would get into the market; after establishing itself it would fetch about the same prices as South African coal. Before the war we used actually to have "Natal or Dishergarh" stipulated in contracts: Dishergarh was 8 annas cheaper. So, in my view, an 8-anna difference would be enough, again: but not just now, when it would have to be Rs. 2. Foreign coal business has been done already for the whole of 1925 and that coal must sell whether the price be high or low.

(To Mr. Legge.)—I think that some collieries anyhow could reduce their prices.

Jharia first-class 14 and 14A coals do not, I think, compete satisfactorily with Natal. I am a middleman and I have no personal experience of their use, but people who have used them are not satisfied.

I do not particularly favour a bounty but it is preferable to a duty. If a duty were imposed on South African coal only, English coal would get in. English coal is selling cheap abroad and dear at home: besides freight from Cardiff to Bombay is only 12s. or Rs. 8 at 1s. 6d., while from Calcutta it is Rs. 7. And that is in spite of the Suez Canal dues.

There is no reason why the tax-payer should pay the bounty: people near Calcutta should pay higher for the coal that they use in order to get the money for a bounty to export-coal. The suggestion that a duty be imposed and the bounty be paid out of the proceeds might help the colliery proprietor or the steamer firms but it would mean the end of the Bombay and Karachi bunkering business.

Charges at Bombay.—When I show landing charges as being Rs. 2, I do not count in the annas eight for duty.

The decrease in those charges is due to the fact that in 1920 when the c.i.f. business started again equipment was insufficient and so charges were

high: the cost was sometimes as much as Rs. 4 per ton. Business had to be done then with much cunning. Now, with extensions in equipment, normal rates have been reached: they cannot go down any further.

In 1920 coal was landed at the docks as well: but the dock dues were and are at present far too high: it cost Rs. 2-4 to get it into wagons for the bunders.

THE INDIAN MERCHANTS' CHAMBER, BOMBAY.

WRITTEN STATEMENT—22ND DECEMBER 1924.

B. Possibility of economies in transport to Calcutta.

7. **Type of wagons.**—Facilities should be provided for unloading wagons directly in steamers by mechanical contrivance.

8. **Railway freight.**—Rates of freight for transport from mines to Calcutta are very high and must be reduced. Steps must be taken to get sea-freight for coal reduced.

9. **Work of Coal Transportation Officer.**—My Committee are strongly opposed to the continuance of the Coal Transportation Officer. The system which was in vogue before the war should be reverted to, i.e., there should be no control.

C. Possibility of economies at the Docks and coal depôts.

10. **Port charges.**—The present Port charges per ton are too high.

11. **Improvements in handling wagons and results on costs.**—See reply to Question No. 7 above.

12. **Loading and shipping facilities.**—Dock facilities are incomplete. Berthing accommodation is insufficient for requirements.

13. **Storage and stacking at docks.**—The stacking of coal should be discouraged. No dumping arrangements should be encouraged at all.

D. Steamer freight.

17. **Steamer freight.**—Freight from—

	s.	d.
England (6,000 miles and 30 days journey)	12	6
Africa (17 days journey)	12	0
Durban to Rangoon	10	0
Calcutta to Bombay (11 days)	Rs. 7-8-0	

E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—Some grades of Natal and English coal are better than Indian coal.

19. **C.i.f. prices of coal at different ports.**—The price of Indian coal should be Rs. 5 to Rs. 6 at pit's mouth in order that it can compete with foreign coal.

20. **Prices.**—The prices prevailing on 22nd December 1924 of different kinds of coal are as under:—

	per ton.
	Rs. A. P.
Natal	19 8 0
English, Welsh coal	23 4 0
Indian, Bengal sea-borne 1st class ex scale	21 0 0
Indian, Bengal sea-borne mill delivery	24 0 0
Indian, Bengal sea-borne mixed, ex scale	20 0 0

21. How competition can be met.—The competition of foreign coal with Indian coal can best be met by the reduction in handling charges, reduction in railway freight from mines to ports and obtaining cheaper freight.

22. Possibility of new overseas markets.—Indian coal can be introduced in the following new markets:—Singapore, Colombo, Straits Settlements, and Persian Gulf. Help should be given in the shape of bounties.

23. Special assistance to other coals competing with Indian.—The South African Government gives a rebate of 7s. 9d. per ton in railway freight on coal.

F. Grading, inspection and certification of coal.

24. Grading of coal.—My Committee are in favour of grading of coal and the scheme for grading should be proposed by Government for acceptance.

25. Classification into grades.—Coals should be graded according to their calorific value. If the highest grade is fixed at 7,500 calories, the next should be fixed at 6,500 and so on.

26. Measures to effect grading.—Government should appoint a Board of experts to fix the grading for each mine according to its calorific nature.

27. Control of grading.—As mentioned in reply to Question No. 26, grading should be fixed by a Board, on which Indians should be adequately represented.

28. (a) Inspection and certification.—Certificates of grade should be granted.

(b) Agency for this purpose.—The agency for granting certificates should be the Board mentioned in reply to Question No. 27.

29. Compulsory versus voluntary grading.—My Committee do not favour the trade voluntarily establishing a grading system. Government should take it up and manage it according to the scheme prepared for the purpose. They should take sufficient powers to carry out the work.

30. Meeting of cost of grading and inspection.—The cost of grading, inspection and certificates should be defrayed by a levy on the mines.

31. Sale on analysis.—As an alternative to grading, it would not be possible to export coal on a guarantee of quality and calorific value as determined by analysis.

G. Pooling of coal.

32 to 34. My Committee are not in favour of pooling of coal. No official system of pooling is necessary or practicable and no official recognition should be allowed to such combination. Pooling should be left to be done voluntarily.

**RATANLAL HIRALAL, Esq., B.A., Sole Proprietor of Messrs.
Hiralal Himatlal & Sons, Bombay.**

(Oral evidence—February 4th, 1925.)

I handle from 150,000 to 200,000 tons of coal a year; it is mostly Bengal coal. I have contracts with the Bombay Municipality, Bombay Improvement Trust and Messrs. F. D. Sassoon & Co., Ltd., all of whom take Bengal coal. I do not buy from any firm in particular; my business is not to buy but to sell. I have purchased coal from the Calcutta Combine, Messrs. Bird & Co., and Messrs. Andrew Yule & Co. I had contracts last year for 20,000 tons with the Bombay Municipality, and for 2,000 tons with the Port Trust, who got the rest of their requirements from the Chief Mining Engineer. I was last year, and am again this year, contractor to the Improvement Trust.

Introduction of sale on calories in Bombay.—I find the sale of coal on calorific value to the Municipality and Port Trust very fine, after the bad experience we have had with the Bengal exporters. We never got first class coal at Bombay, except on paper. It was described as first class in the contract—that was all. Wherever it went it brought us trouble with our purchasers, and that is why even with a difference in price of Re. 1 to Re. 1-8 in its favour, Bengal coal does not sell in competition with Natal. The fault is absolutely with the Bengal firms.

The really good Bengal coal firms did not want to sell in Bombay; they could sell more conveniently to railways and mills on the other side. The other firms did not supply coal up to the quality that they professed to sell. They would make big contracts at low prices, and then plead that they could not get wagons if they meanwhile got an opportunity of selling the coal to better buyers. That is why the words "Subject to Wagon Supply" appeared in every contract. It was for this reason that one of the big Bombay consumers, the Bombay Dyeing & Manufacturing Co., Ltd., decided to buy only on a guarantee of wagon supply; this was whilst I was working with my uncle.

Advantage of the middleman-system in Bombay.—As regards mixing of coals in Bombay on the coal bunders by the middlemen, Mr. W. F. Walke late of the Calcutta Coal Combine told us that we middlemen were mixing coals and robbing the buyers. He found this remark very costly to himself for none of the middlemen would have anything to do with him or his coal.

The middleman is inevitable. He takes the risk and puts up the finance and the business would not go on without him. Take the 1924-25 Municipal contract. I undercut everybody by Rs. 2 per ton, taking the risk of the market because I was firmly of opinion that prices must come down. The c.i.f. price when I made the contract last year was Rs. 21-8 per ton, but during the period of the contract I have been able to purchase coal at from Rs. 4 to Rs. 5 per ton less than this rate not c.i.f. but actually on the bunder at Bombay. I speculated on the market, that is the middleman's business. He does not produce or consume coal but is always acting for the advantage of the consumer by keeping prices down.

I have been able to purchase coal far cheaper than the rate at which I have tendered. I am getting coal Rs. 6 to Rs. 7 cheaper on the bunder because the Calcutta Coal Combine and Messrs. H. V. Low & Co., Ltd. have had to dispose of their stocks at a great sacrifice. I got a parcel of 7,000 tons Bengal coal at Rs. 17 per ton on the bunder—half first and half second class Bengal. I entered into a contract with the Bombay Improvement Trust at Rs. 21-6 (I had originally quoted Rs. 21-2) and Rs. 21 was then the price on the bunder. The contract was for genuine good second class Bengal coal. I am now able to supply them with half first class and half second class and am making a clear profit of Re. 1-8 per ton. This is on calories.

I could not possibly work so cheaply if I did not look to efficiency in details. For example I save annas 8 per ton by arranging speedy discharge of steamers. I am able to obtain boats at a rate which works out cheaper than people can manage who have their own boats, because there is a depression in trade. I can obtain labour more cheaply than other merchants because working on a large scale I command more. I have cheap transport because I have my own fleet of lorries purchased at ridiculously cut prices.

The system of sale by calories.—The system of sale on calories is not satisfactory for us as yet, but it certainly is for the buyers. It is not satisfactory for us because the sellers are not yet trained up to selling us on a guarantee of calorific value whereas we have to give a guarantee to our buyers and have to take the risk ourselves. The contract on paper states Rs. 23 per ton, but owing to penalties involved we might be paid only Rs. 19 per ton. If there is any loss, we bear it. We have been waiting for the time to come round when the collieries will sell on our conditions. One of the largest Calcutta coal firms, Messrs. Bird & Co., have already fallen into line with the Bombay conditions and are selling me on a guaranteed calorific basis; I refer to the 7,300 tons imported by me per the steamer

"Filippo Artelli" recently. The other Calcutta coal firms will fall into line in time, for they will get no Bombay business otherwise.

We had the analyst going on board the "Filippo Artelli" every day during the discharge, taking samples, 26 in all, from which they ascertained the calorific value of the coal. I am pleased to say that Messrs. Bird & Co. appear quite satisfied with the result and are willing to sell us any number of cargoes on these conditions.

When I quoted this year to the Municipality, I stated "First class Bengal coal" meaning coal like that from the "Filippo Artelli." I did not quote a particular mine because last year when I sold them coal specifying the particular mine from which the coal would be drawn, I found the colliery people holding me up for a higher price, and I therefore had to obtain the special sanction of the Municipal Commissioner to supply "Equal quality." I may remark that I did not find the Jinagora (Tricumji Jivandas) coal satisfactory. I had a representative at the colliery, but in addition to his daily rejections, I had to reject no less than 30 wagons of the Jinagora coal at Bombay. Under my present arrangements I avoid this difficulty.

Certificates and grading.—In Bombay we never believe in a certificate and in particular we never trust Bengal colliery certificates. With Natal and English coal the colliery certificates are conclusive proof of quality shipped, etc. We accept them because from experience we can trust the shippers. We are entirely against grading. Let the Bengal colliery people take care of themselves instead of sheltering behind any system of grading. Let them set to work and improve the quality and condition of the coal and then stand on their own merits. I am a thorough advocate of sale and purchase on analysis, i.e., analysis as ascertained at Bombay by the Mahler Bomb Calorimeter. We do not want to be told from Calcutta what the analysis is. When I first started on this calorific basis I suffered a loss of Rs. 30,000 on the Municipal contract because I relied on a Calcutta analysis showing 7,700 calories. The analysis was made by the Calcutta Mint and the coal was described as first class coal of excellent steaming qualities, but it proved to be only a second class coal with a calorific value of 6,200 calories. This was when I first started and knew nothing of calories.

Suggested grades by calories.—First class Victoria-Baraboni will give 7,300 calories in Bombay and 14-15 seam Jharia coal 6,800 to 7,000 calories. So far as I am concerned I should grade by calories as under:—

	Calories.
1. Selected first class	6,800 to 7,300
2. Ordinary first class	6,500 to 6,800
3. Selected 2nd class	6,250 to 6,500
4. Ordinary second class	6,000 to 6,250

Below 6,000 calories would be third class and we have no use for this class of coal at Bombay.

Disherghar would fall below 6,800 calories. Bombay does not want Disherghar. The consumers say it burns like paper. The firemen like it because of its free burning, but the owners do not. It burns far too easily not to mention the smoke nuisance. Bombay wants Jharia coal.

Spontaneous combustion.—Five or six cargoes of Jharia coal mixed with Raniganj coal arrived in Bombay, I believe in May, June and July last, and went on fire both in the holds of the steamer and again when stacked on the bunder. I attribute this to the Raniganj mixture; therefore we do not want Raniganj coal mixed with Jharia for Bombay.

Comparative merits and prices.—The cargo by the "Filippo Artelli" was sold to me on the basis of 7,000 calories. The calories actually worked out at 6,791. Messrs. Bird & Co., Bombay for over a fortnight tried to sell me "Guaranteed 14 seam" but I refused, insisting on analysis at Bombay. This figure of 6,791 is the highest I have had for a Bengal coal imported during the last 18 months, samples drawn by a Bombay Analyst. The

variation is far too great, it is from 6,500 to 7,000, but the average of 6,791 is satisfactory. Messrs. Bird & Co. certify that the coal was all from 14 seam. Counting all items of expenditure, including interest and insurance they are getting Rs. 5-8 per ton f.o.r. at pitsmouth for the coal. We have this week received an offer of a cargo of Welsh coal at a net rate of Rs. 22-12 or close thereto per ton c.i.f. Bombay. My last purchase of South African coal was Durban Navigation at Rs. 18-5 per ton c.i.f. Bombay. It is a coal that gives 7,300 calories and take it from any end of the steamer you like, it has no stones or other impurities. Besides it is a screened coal. The Bombay consumer does not want dust. The Engineers here prefer a second class lumpy coal to a first class dust. People do not care for a soft coal and English coal is not popular therefore. Bengal coal, supposed according to the R. I. M. to have no dust, actually runs to as much as 50 per cent. of it. I strongly advise legislation or assistance to the colliery people to enable them to have the coal properly screened.

Foreign countries, both England and Africa are perfectly prepared to guarantee their coal. Not so long ago they had offered to me on a guaranteed calorific basis 100,000 tons of first class Coronation (Durban) coal. The year before last when my competitors were supplying Natal coal to the Municipality they had a far easier time than I have had in supplying Indian coal.

I do not think Natal coal will be able to hold Bombay market. It was unbelievable some time ago that 14 seam Jharia coal would be sold at from Rs. 4-8 to Rs. 5 per ton f.o.r. pitsmouth, but with firms like Bird & Co. backing us up at that price Natal cannot stand it. The exchange cannot keep up to the present level. I am against an increase in the present duty on African coal. If you put one on, the Bengal coal firms would grab the money by immediately enhancing the f.o.r. or pitsmouth price for Bengal coal. This would mean the Bombay Mills would say goodbye to coal and instal either electric current or liquid fuel. Without any increase in the existing duty, Bengal coal that in March last year was quoted at Rs. 23 per ton c.i.f. Bombay will have to come down to Rs. 17-8 per ton c.i.f. You may take the following as the details of the items making up the c.i.f. price:—

	Rs.	A.	P.
Rail freight collieries to docks	3	8	6
Calcutta port charges	1	0	0
Interest	0	4	0
Shortage on weighment at Bombay	0	4	0
Insurance	0	4	0
Steamer freight	7	0	0
	12	4	6

You have to deduct annas 8 from the contract price for the shortage in calories; that makes the price Rs. 17-7 per ton on the cargo per "Filippo Artelli," and deducting the above charges you are left with a price of Rs. 5-2-6 at pitsmouth, but probably Messrs. Bird & Co. got Rs. 5-8 per ton or thereabouts because I imagine they did their own finance. We got a shortage of only 249 tons on the 7,300 tons shown in the bill-of-lading.

Weighment of coal.—Ship owners have to pay annas 6 per ton for weighment at Bombay. To weigh at Kidderpore over a weighbridge would not cost more than annas 2 per ton (at South Wales ports they charge from a half-penny to one-penny per ton). If proper facilities for weighing existed at Kidderpore docks it would save at least annas 4 per ton in the freight charge by the Steamship Owners. A number of weighbridges installed there would solve the problem and would soon pay for themselves. If you weigh the full wagon on arrival and re-tare the wagon after discharge at Kidderpore, you do away with the present unsatisfactory method of survey and are able to arrive at a fairly accurate figure for insertion in the bill-of-lading, which is the weight that should be charged to the buyer less the 2 per cent. as

is customary when purchasing coals from England and South Africa. It is only a question of getting the Calcutta Port Commissioners to move in the matter and of making the colliery owners lower their prices. If the Bengal firms want the Bombay market then they must bring down their prices. I do not suggest they should sell their coals at a loss. Bird & Co. are, as far as I know, willing to sell 100,000 tons at the aforementioned rate—14 seam coal which is all we want at Bombay. As to 11—12 seams, at Bombay we want the best coal and these seams on my own grading, based on practical experience at Bombay, would come under the category of second class coal.

17. **Steamer freight.**—I put in a note giving my views on this subject; it is based on facts given to me by my principals the Mitsui Bussan Kaisha, Ltd:—

The present level of steamer freight on coal Calcutta to Bombay is extremely high and we give below a few facts and figures in support of our contention:—

The ruling freight Calcutta-Bombay a distance of about 2,100 miles for the past two years or so is between Rs. 7 and Rs. 9 per ton while the freight from Cardiff to Bombay a distance of about 6,100 miles, i.e., 3 times the distance Calcutta-Bombay is 12s. to 14s. which is the equivalent of Rs. 8-1 to Rs. 9-6 per ton at current rate of exchange which practically means an equal freight for thrice the distance (to say nothing of the high charges for passing through the Suez canal). Similarly freight from Cardiff to Port Said a distance of about 3,050 miles, i.e., $1\frac{1}{3}$ times the distance Calcutta to Bombay is 10s. equivalent to Rs. 6-11 only which means 75 per cent. freight for 150 per cent. distance. Again freight from Durban to Bombay a distance of 3,820 miles, i.e., nearly double that of Calcutta-Bombay is Sh. 12-13, the equivalent of Rs. 8 to Rs. 8-11 at current rate of exchange, which practically means an equal freight for double the distance.

Lastly, the freight from Japan (Moji) to Singapore, a distance of about 2,583 miles, i.e., nearly $1\frac{1}{4}$ times the distance Calcutta-Bombay is only Rs. 3-4 per ton at the current rate of exchange, which means less than half the freight for $1\frac{1}{4}$ times the distance.

To show further disparity in freight on coal from Calcutta-Bombay we beg to point out that by way of an illustration, the freight of different commodity such as cotton, which is about Rs. 10 per ton of 40 cubic feet from Bombay to Japan a distance of about 5,352 miles, i.e., $2\frac{1}{2}$ times the distance Calcutta-Bombay, which practically means about 125 per cent. freight for 260 per cent. distance. Besides, it should be noticed there is a vast difference between cotton and coal cargoes, in favour of the former. In a coal cargo no other merchandise can be shipped as it is sure to be spoiled, while in cotton any sort of merchandise can safely be shipped without any risk of being spoiled.

Taking all the above facts into consideration, the present level of freight from Calcutta-Bombay is exorbitant indeed.

If Government could control sea freight, there would be nothing like it, when the highest freight in the world is that between Calcutta and Bombay, but freight and the price of coal have to stand the test of competition and not a legislative test, just as I did not need legislation to get Messrs. Bird & Co.'s price down. I am now offered Welsh coal at 34s. 6d. = Rs. 22-12 c.i.f. Bombay. This is possible because the freight from Wales to Bombay is about the same as that from Calcutta. Of course we command very low prices because we command a very large business. Other people might not; we can.

**C. B. NANAVATI, Esq., of Messrs. NANAVATI VEVAINA & Co.,
representative of the Indian Merchants Chamber, Bombay.**

(Oral evidence—February 4th, 1925.)

There are 475 members of our Chamber of whom about 12 actually deal in coal.

I myself handle 60,000 tons a year, the main portion of which is from Newcastle (England) and South Africa; occasionally I get Bengal coal from Messrs. Andrew Yule & Co.

B. Possibility of economies in transport to Calcutta.

8. Railway freight.—One means of getting steamer freight reduced as suggested by us would be by giving bounties to Indian steamship companies. We leave it to Government to discover the means. In India steamers had a monopoly of the coastal trade, then, we think, many steamers would be available.

(To Mr. Legge.)—The rebate on coal sent down to Calcutta should be raised to Rs. 2.

9. Work of Coal Transportation Officer.—The Coal Transportation Officer used to certify indents sent out from this side and though I do not say that he actually impeded supplies he did not prove of great help. If wagons are not sufficient, it might be said that his existence is necessary; but we are not concerned, as his presence is necessary only if the coal is to be carried by wagons from collieries to Bombay, and for us the sea-route is the cheaper. As regards means of dealing with seasonal shortage of wagons, you must have a Coal Transportation Officer unless you have regulation by the railways themselves as you did before the war. But, I understand, there is no scarcity at present even though this is the cotton-season when scarcity is normal. If this continues, the Coal Transportation Officer is not needed; if it does not, then he is needed or the railways would have to do the work.

(To Mr. Legge.)—I quite realise that if the post is abolished it cannot be revived suddenly to deal with emergencies; but if facilities are likely to increase year by year the risk involved in abolishing the post is not very great.

C. Possibility of economies at docks.

10. Port charges.—Our written reply refers to Calcutta conditions.

(To Mr. Legge.)—Port charges at Bombay are high also. We pay only 3 annas a ton for any coal dumped on the Bunder, and this is a reasonable rate. But if coal is discharged in dock we have to pay 8 annas plus 50 per cent.: I have not handled coal coming into the docks lately. Very little coal comes into the docks. The charge levied for discharging in the docks is unreasonable and that is why so little coal is unloaded there.

12. Loading and shipping facilities.—*(To Mr. Legge.)*—Our remark does not apply to the Bombay docks where there are no facilities for discharging coal at all.

(To Mr. Whitworth.)—Our remark as to berthing accommodation refers to 1921-22. I have had no recent experience.

13. Storage and stacking at the docks.—The objection to dumping is that it leads to mixture of coals; and it leads to the coal being handled roughly and broken. In Bombay people do not like small coal; there is a prejudice against it. We should prefer loading to be done direct from wagons.

Very little coal is stacked in South African ports and none at all in Welsh. Mechanical loading, for example with a belt system, may break up the coal. Even in South African ports people do not like to have to berth steamers where there is a mechanical loading plant of that type. The

best qualities of Indian coal are friable and break easily while South African coal stands handling better.

D. Steamer freight.

17. **Steamer freight.**—The steamer freight to-day is

from Durban to Bombay	13s. 9d.
from Portuguese East Africa (Witbank)	12s. 9d.

The last Calcutta quotation was Rs. 7-8-0. As compared with pre-war, freight from Calcutta has nearly doubled; it used to be about Rs. 4. Freights from South Africa to Bombay have increased in the same proportion: they used to be 8s. or 9s.

E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—I consider 14A and 14 first class Jharia and Giridih coals to be as good as Natal. We get none of these coals over here now. They would sell at the same price as South African coal, provided that they were sent in good condition.

To Mr. Wadia.)—I speak from comparative tests; I can quote the following approximate figures:—

14A Bagdigi and 14 seam (best Jharia coals) have 14 lbs. evaporative value.

St. George's Burnside has 14.75 lbs. evaporative value.

Tendiga has 14.45 lbs. evaporative value.

Durban, perhaps the worst of 1st class Natal coals, has 14.5 lbs. evaporative value.

Giridih has 14.25 lbs. evaporative value.

But most other Indian coals are very inferior. During the war we had the worst experience of Bengal coal: it was very bad. Whenever prices go up, as we know by bitter experience, they send us bad coal. The highest price which I got for Indian coal was Rs. 125. I made a profit of Rs. 25 per ton. It was one of the worst of Indian coals: but it was a very small lot, sold under extreme famine conditions.

20. **Prices.**—"Ex scale" means "*ex* bunder." The charges from ship to bunder would amount to Rs. 1-12-0 with and Re. 1-4-0 without duty. The details are:—

	As.
For lighters at present	6
For discharging and stacking	11
For Bombay Port Trust charge	3

The cost of carting to the mills depends on the situation of the mills but on an average would be Rs. 1-12-0 per ton. There is an additional charge of 12 annas a ton for loading into lorries, weighing at the mill premises, unloading and stacking. The balance of 8 annas, making up the Rs. 3 difference between *ex* scale and mill-delivery, is for rent of Port Trust ground and other charges.

African coal is 30s. c.i.f. to-day and Bengal is Rs. 19. Bengal is thus Re. 1 cheaper but consumers would prefer to have Natal coal even at that difference. For Bengal coal to get back into the Bombay market there must be a difference of Rs. 2 to start with. The difference would be bridged up gradually as it gains in reputation.

22. **Possibility of new overseas markets.**—The only way in which Bengal coal could compete would be by a bounty. I should think that reduction in price and improvement in quality would also have to be effected.

F. Grading inspection and certification of coal.

We should prefer a certificate issued by a Board rather than a mine's certificate which would not restore confidence.

31. **Sale on analysis.**—(To Mr. Whitworth.)—We do not rely on analysis and never purchase on it. The Municipality, Improvement Trust and Port Trust are buying on this new method but I do not think they will find it profitable. They may say that they have saved lakhs of rupees but I doubt it. Nowhere in the world, I think, is coal sold on this basis; it is not a manufactured article, so the seller cannot possibly guarantee quality.

We have never tendered on this basis. As soon as the Municipality and Port Trust started this scheme we ceased to tender. The Municipality are buying coal at ridiculously low rates; they buy it at about Rs. 2 under the cost price to the sellers.

THE MILLOWNERS' ASSOCIATION, BOMBAY.

(Extract from letter, dated 6th January 1925.)

2. Before proceeding to give specific answers to the Questionnaire my Committee desire very briefly to outline their general attitude upon the subject.

3. It will be remembered that in February of this year the Legislative Assembly passed a resolution in favour of the imposition of an additional import duty of Rs. 4-3-0 per ton on South African coal.

The Government of India opposed the resolution maintaining that the competition which the Indian Coal Industry had to meet was in the overseas market rather than in the home market and as a preliminary to an investigation of the needs of protection by the Tariff Board appointed a Committee to enquire:

- (a) what measures could be taken to stimulate the export of suitable coal from Calcutta to Indian and foreign ports, and
- (b) what effective measures could be taken for the pooling and grading of coal for export.

Your Committee will also recollect that the resolution passed by the Assembly in February was intimately connected with a deputation which waited on the Secretary, Commerce Department towards the end of last year.

The deputation put forward a case for:

- (a) The reduction of coal freights for long distance railway traffic;
- (b) The restoration of an export rebate on all coal shipped from Calcutta to inland or foreign ports; and
- (c) The imposition of a countervailing duty on bounty fed South African coal.

The Bombay Millowners' Association were invited to send a delegate to join this deputation; they did not do so owing to their inability to support the demand for the imposition of extra duties on South African coal, but in their reply to the invitation gave their definite support to the claim for a reduction of railway freights on coal for long distance traffic.

4. Whilst a reduction in railway freight rates might not greatly help in the restoration of the coal export trade of India, there can be little doubt that an enquiry into the necessity for the present high rates would be most advisable in the interests of the Indian consumers in centres like Cawnpore, and Ahmedabad and to a certain extent in Bombay, and my Committee would respectfully urge the necessity of extending the Coal Committee's terms of reference so as to include a detailed investigation into the prevailing railway freight rates and the possibility of a substantial reduction in the interests of consumers.

In this connection my Committee most heartily endorse the resolution passed at the recent meeting of the Associated Chambers of Commerce:

"That in view of the fact that the present high rate of railway freight on coal prejudicially affects the maintenance and development of industrial concerns in Northern India and those situated at a great distance from the Bengal and Behar coalfields, this Association strongly urges the Government of India to take immediate action substantially to reduce the railway freight on coal carried over a long distance "

and the under-quoted remarks by Sir Thomas Sievwright Cutto at the Annual Meeting of the Bengal Company:

"I want to emphasise that coal freights on the E. I. R. and B. N. R. are far too high and are not justified in the present condition of the industry, when we are fighting for our very existence not only in foreign markets but in our own national markets like Bombay and Karachi..... Freight rates must be fixed to encourage and not to kill the industry: rates to put us on a level with foreign railway subsidised coal which ousts us now from our home markets and abroad. The only line that has wakened up to conditions in the Indian coal trade is the G. I. P. Railway. Its reduction in coal rates, of course apply only to the Central Provinces, but it is to be congratulated for doing something to meet the situation before declining coal traffic forced them to take the step. If the G. I. P. has recognised the necessity, how much more imperative it is for the E. I. R. and B. N. R. whose revenues depend so largely on coal, to reconsider their rates especially to Bombay and up-country industrial centres like Cawnpore. Many Bombay buyers only take Bengal coal if rail borne direct to their factories. By steamer there are too many handlings. Direct delivery is one of the ways the competition of Natal can be met."

5. My Committee would also like to impress upon the Coal Committee that as far as the vicinity of Bombay City and Island is concerned, there has of recent years been a very great decrease in the demand for both Indian and foreign coal owing to the fact that at least 50 per cent. of the cotton mills and many other large industrial establishments have already changed over from steam to electric drive, and 25 per cent. of the remaining mills now use oil fuel in preference to coal. The chief reasons for this change over to electric drive and oil fuel, are, of course, the lower costs, but there can be little doubt that some of the changes can be accounted for owing to the coal and wagon shortage from 1919-1922 and the uncertain quality of Bengal coal delivered in Bombay. It is for the last named reason that Natal coal has of recent years been preferred to Bengal coal, and at the present time mills are, generally speaking, prepared to pay a slightly higher price for Natal coal because they are assured of a definite quality of screened and graded coal. About the year 1895 or 1896 the Bombay mills introduced Indian coal but at that time they were supplied with screened coal from special mines; at the present time the mines do not give any guarantee of quality, mixing is extensively resorted to, and screening would appear to be the exception rather than the rule. For these reasons mills generally fight shy of Bengal coal, but my Committee feel that something might be done to rehabilitate Bengal coal in the Bombay market if the mills could buy unmixed, screened and properly graded Bengal coal with a guarantee of quality. There appears to be no inherent disadvantage in Indian coal as compared with South African.

6. My Committee are emphatically opposed to any undue Government interference with the coal trade of this country, and would deprecate any legislation for the establishment of a grading board controlled by Government. If the pre-war practice were re-established, whereby consumers could buy coal of a known quality from a particular mine, unmixed and well screened there would be no necessity for a grading board. The price would then be

regulated by the quality of the output from individual mines or groups of mines.

7. One other point upon which my Committee would like to touch upon before proceeding to answer the Questionnaire is that of waggon supply, and general transport facilities. Though there is no waggon shortage at the present time owing to the slackness of the general demand my Committee consider it essential that adequate steps should be taken to prevent any possibility of a recurrence of the difficulties experienced during recent years, and waggon preference given to contracts for coal to be used by Indian Industrial concerns.

8. Many of the questions in the Questionnaire of a technical nature hardly concern this Association but brief answers are appended to those in which my Committee are particularly interested and which they are in a position to answer.

ANSWERS TO QUESTIONNAIRE.

B. Possibility of economies in transport to Calcutta.

7. **Type of wagons.**—With modern appliances almost any type of wagon is suitable but facilities should be provided for unloading wagons direct into steamers by mechanical contrivances.

8. **Railway freight.**—The railway freight rates from the mines to Calcutta are too high and should be reduced.

9. **Work of Coal Transportation Officer.**—The work of the Coal Transportation Officer has in the past to some extent facilitated the trade in export of bunker coal. This was chiefly at the time of the general wagon shortage. It is not, in the opinion of my Committee, desirable that the Coal Transportation Officer should be retained and, speaking generally, the system in vogue before the war should be reverted to.

C. Possibility of economies at the docks.

10. **Port charges.**—The present Port charge of Re. 1-8-0 per ton is too high.

11. **Improvements in handling wagons and results on costs.**—See answer to question 7. My Committee are not aware to what extent the general installation of such contrivances would reduce the cost of export on bunker coal.

12. **Loading and shipping facilities.**—Facilities for loading and shipping coal at the docks are most inadequate. Berthing accommodation is insufficient for requirements in most cases. Lessons should be taken from England and Wales or from Durban and Delagoa Bay. As far back as 1911, the Bombay Port Trust proposed the construction of a special coal wharf for coal arriving in Bombay by sea; the matter has been left in abeyance since 1911, but the advisability of taking up the scheme again might be considered.

D. Steamer freight.

17. **Steamer freights.**—Steamer freight rates are at present much too high. They are also very erratic and recently jumped from Rs. 7 to Rs. 9 within 24 hours. The same thing happened in March last. A comparison of the following rates should in the opinion of my Committee convince your Committee that the charges are much too high.

	per ton, Rs. &.
England—Bombay, 6,000 miles—30 days journey (including Suez Canal dues)	12 6
Durban—Bombay	12 6
Durban—Rangoon	10 0
Calcutta—Bombay—11 days journey	8 0

E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—At different times, English, Welsh, German, Natal and Transvaal coals have been used in Bombay mills. Some of the Indian coals are equal in value to African but there is a very great difference in the general condition of the coal on arrival at Bombay which is chiefly due to bad loading at the collieries and antiquated methods of shipment at Calcutta. Indian consumers are generally prepared to pay slightly higher prices for Natal as against Indian coal.

19. **c.i.f. prices of Indian coals.**—If the pit-head price of coal is Rs. 8 per ton the price would be Rs. 20-8 per ton in Bombay c.i.f.

20. **Prices.**—In Bombay at the present time the price per ton c.i.f. is—

	Rs.	A.
Natal coal	19	8
Transvaal	19	0
Welsh	27	0

21. **How competition can be met.**—The competition with South African and foreign coal generally can best be met by the reduction of rail and steamer freights combined with the provision of adequate facilities for screening and clean loading at Indian collieries.

23. **Special assistance to other coals competing with Indian.**—The only case of which my Committee have definite knowledge is that of South Africa. The South African Government gives a rebate of Sh. 7-9 per ton on the railway freight of the coal.

F. Grading, inspection and certification of coal.

My Committee, while in favour of the general principle of grading coal are not in a position to indicate the grades into which coal should be classified. Their views on this point are outlined in greater detail in the body of their letter.

27. **Control of grading.**—My Committee are emphatically opposed to the establishment of a grading system controlled by Government. If there is to be a Grading Board it should be composed entirely of non-official persons.

28. **Inspection and certification.**—My Committee's opinions are set forth in the body of their letter.

29. **Compulsory versus voluntary grading.**—Government should under no consideration take legislative action to enforce grading.

30. **Meeting of cost of grading and inspection.**—The cost incidental to grading should be borne by the collieries.

31. **Sale on analysis.**—It would not be possible to export coal on a guarantee of quality determined by analysis. The question of calorific value depends on the kind of test adopted.

G. Pooling of coal.

My Committee are not in favour of the pooling of coal and official recognition should not be given to any combination of collieries.

Mr. DAVECHAND DHARANSY SETHIA, Esq.

Note on the depression of the Bengal Coal Trade in Bombay.

November 1924.

It is a known fact to all the members of the Bombay coal market that in Bombay the Bengal coal trade has practically died out. At present.

instead of Bengal coal other foreign coals are in use such as African and Welsh coals. If this depression continues our Indian coal trade will be greatly affected. Before trying to improve the position we should first of all consider the causes which led to this depression.

1. Government's Transport Policy.—At the time of the Great European War coal consumers had great difficulty in satisfying their needs in spite of their willingness to pay higher prices. For this reason the Government appointed a Coal Controller. To some extent the scarcity was relieved but though the war came to an end the control over coal continued in one way or other and still exists with the Coal Transportation Officer.

After the war the control over coal is not at all needed yet it still exists. Consequently those who were on good terms with the officers got coal at cheaper rates, whereas others had to be content with whatever coal they could get at higher prices. The Coal Transportation Officer's presence is not at all required yet the Government have retained that officer. This has affected the coal trade directly or indirectly. If just as before the war the East Indian Railway and Bengal Nagpur Railway had now their coal managers to supply wagons, many obstacles would be removed and much of the time and money wasted would be saved.

2. Attitude of the colliery owners.—The colliery owners do not seem to take sufficient trouble when supplying coal. With nearly every shipment the quality is changed. Whether this is due to their negligence or to their bad intentions, it is certain that it affects the trade to a great extent.

3. Indian Mining Association's Contract.—The terms of the contract safeguard the interests of the sellers only, and the interests of the buyers are not at all considered. The contract allows the seller to part with his coal when and as he wishes and because of this the buyer is left at his mercy and is not at all protected. The terms of the contract should be changed.

4. Railway facilities are not sufficient to meet the demand for taking coal from one place to another, and the railway freight is so high that shipment by rail is impossible.

5. Steamer transport also does not give sufficient facilities, and freight is also greatly increased. Before the war the freight for Bombay from Calcutta was Rs. 4 only: now it has risen to Rs. 7-8. From Durban to Bombay costs 12 shillings only whereas the above figure of Rs. 7-8 from Calcutta to Bombay comes to nearly 11½ shillings.

Before the war railway-freight in 1913 and 1914 was Rs. 11-4 when first class quality coal (upcountry) was obtainable at Rs. 4 and the Jharia coal at Rs. 3 to Rs. 3-4. Because of the war steamer-transport was at a standstill and consequently coal came into Bombay by rail. To insure a sufficient supply of coal for the Royal Indian Marine the Government had reserved some of the collieries. Because of the war not only was the foreign coal supply stopped but Indian coal was even exported to foreign countries. Therefore the demand for Indian coal greatly increased, and the effect was that the suppliers began to take a mean advantage of the terms of the Indian Mining Association's Contract. So the Coal Controller was appointed. The price for second class coal went up from Rs. 1-12 to Rs. 10, or 15, and in spite of this heavy rate being paid the colliery owners supplied yard-dust and such other inferior materials instead of coal. The Railway Company raised the freight from Rs. 11-4 to Rs. 15-6 and the Government levied a surcharge of Rs. 1-2-6. Therefore really speaking the freight came to Rs. 17-12. In spite of paying such high prices for their coal the millowners did not get proper and good supplies and so, getting annoyed, some of them began to buy crude oil and some applied for Tata Electric Power.

These conditions changed with the end of the war. The surtax was removed. African and Welsh coal began to pour in. So the price of Bengal coal went down but the freight remained as it was. The applications for Tata Power were duly received. Long time contracts for crude oil and electric power were made, and consequently the demand for coal was greatly reduced. The African colliery owners began to compete strongly with the

Bengal colliery owners and the African Government began to give them a bounty of 9 shillings with the result that in Bombay 95 per cent. of African coal began to be used and therefore the Bengal coal-trade received a terrible blow in Bombay.

Suggested remedies.—Now to increase the consumption of Bengal coal in Bombay the following measures are quite necessary and if they are properly carried out the Bengal coal-trade would again revive.

(1) The control over coal should be abolished, that is, the Transportation Officer's office should no more exist.

(2) Railway facilities should be increased and the railway-freight should be substantially decreased. Before the war the railway-freight for Calcutta from the collieries was Rs. 2-6-0 whereas at present the rate is Rs. 4 more. Therefore we should recommend the rate to be brought down to the pre-war rate.

(3) Port Trust charges have also gone up and so a substantial reduction is essential. In Calcutta very often coal-liners have great difficulty in getting a berth, which should now be removed. Steamer charges should also be substantially reduced.

(4) If the colliery owners wish to stabilise the Bengal coal market in Bombay they should, like Natal and other coal merchants, send out their coal screened and should take care to see that no change in quality of coal takes place during shipment.

(5) Such changes should be made in the Contract of the Indian Mining Association as would safeguard the interests of the buyers as well of the sellers.

D. D. SHETHIA, Esq., and S. D. SHETHIA, Esq., of Messrs. S. D. Shethia & Co., Bombay.

ORAL EVIDENCE—FEBRUARY 5TH, 1925.

Objections to Bengal coal.—We used to import only Bengal coal but now deal only in Natal coal, finding that Bengal coal is too dear and that the quality is unsatisfactory. There is no certainty about Bengal coal: you ask for first class but you are not certain of getting it. Also it is not sifted so well as Natal coal.

We handled about 30,000 tons of coal, all from Natal in the last month chiefly Northern Natal Navigation and Durban Navigation coal.

The difference in price is Re. 1-8 to Rs. 2 in favour of Natal coal: Indian coal is the dearer.

Spontaneous combustion.—There are fires on the Bunder very often in the Raniganj coal stack and sometimes in the South African and Welsh also. But when there is a fire in South African and Welsh coals, it does not burst out into flame but smoulders and spoils the outer layer of the coal and gradually turns to ash. There have been no fires recently. They occur during summer or after the rains when the coal is damp.

(*To Mr. Legge.*)—Up to two years ago we got Bengal coal by rail, but now we get our supplies by sea. Last year we sent for Bengal coal, being afraid that a duty would be imposed on Natal coal. One cargo caught fire (that was Bird's Bankola coal) and I had to ask for another, which was "Heilger's Standard." Just now African coal is in better demand, so we deal in that. Had we received "Heilger's Standard" as we expected, we would have been able to import at least 40,000 to 50,000 tons in this year.

The reasons why I do not touch Bengal coal are as follows:—

(1) the railway freight is too high,

- (2) so is the steamer freight,
- (3) the colliery proprietors do not keep a reasonable profit and sell a uniform quality of coal,
- (4) the Calcutta Port does not take care to prevent the coal from being broken or to handle it properly as they do in South African Ports,
- (5) I do not know what profits the colliery owners make but I suspect that first class coal-owners make too big a profit.

(*To Mr. Whitworth.*)—If first class Bengal coal were loaded with the same care at the collieries and at the docks as is South African, the price fetched by it in Bombay would be the same as that fetched by the Natal coal. At present first class quality Bengal coal could compete with the best African coal only at a price of Re. 1-8 or Rs. 2 less than the African.

Loss in weight on rail-borne and sea-borne coal.—It is a question of price whether it pays to import Bengal coal by rail or by sea. Rail-borne coal is less broken up and arrives in better condition but the trouble is always about wagons which are never available when required. (*To Mr. Legge.*)—In the old days the deficiency in rail-borne coal from Bengal used to be about 2 per cent: on coal sea-borne from Calcutta it varies very much—it is between 2 and 4 per cent.

I always buy Bengal coal weighed over ship's side in Bombay: I should not accept Bengal coal on the same basis as South African, i.e., 2 per cent. less bill of lading weight.

Buying on calories.—Only the Municipality and Government Departments buy Bengal coal on calories. My business is with the mills none of which buy on calories. I do not regard it as practicable to sell coal on calories.

Natal coal.—I am buying just now Northern Navigation which costs Rs. 19-4 c.i.f. Bombay. This coal is preferred in Bombay to St. George's Burnside both for mills and bunkers, because it is less powdery. Most of the bunkering here is done on measurement in steamer and buyers on this system will not allow powdered coal.

I put in a letter which I have written to the press about the causes of depression in the Bengal coal trade which will speak for itself.

Major DUNCAN WILSON of Messrs. Killick, Nixon and Co., Bombay.

(*Oral evidence—4th February 1925.*)

My firm were for many years agents for Messrs. F. W. Heilgers & Co. before the latter in Bombay joined with Birds, and started their own House in Bombay. Besides that we handled Welsh and Natal coal, and occasionally Australian coal. I was personally in charge of the coal department for many years and supervised unloading, and delivery to mills, railways, etc.

With the amalgamation of Messrs. Heilgers and Birds, we ceased to have any direct interest in Bengal coal, but since the war we have sold mostly Natal coal and some Welsh. As agents we have bought quite a lot of Bengal coal for the Bombay Steam Navigation Co., and the Kohinoor Mills.

The Kohinoor Mill is now largely electrified.

Comparative merits.—At present price, and taking 1s. 6d. exchange, Natal coal is infinitely preferable to Bengal coal. The price of good Natal is now about Rs. 19 c.i.f. Some Bengal firms recently quoted in the neighbourhood of Rs. 20; then they came down to the neighbourhood of

Rs. 19, but we find that the quality of Bengal coal cannot compete at this rate with that of fresh Natal landed at our door.

We reckon Natal superior to Bengal by 10 per cent. If you take best Dishergarh the difference might go down to 5 per cent. I have heard the percentage of difference put as high as 15 per cent. by some consumers and by some firms who contract for ships' bunkers.

We have not bought Bengal coal very recently in large quantities. Our mill bought a small parcel of good Bengal some time ago. The Bombay Steam Navigation Co.'s contract for Bengal coal ran out last year and since then they have up to date taken Natal. They are using a good deal of oil fuel and their coal consumption is now about 40,000 tons per year.

Buying on calories.—The Municipality, and also I understand the Port Trust, are buying on calories: that is the principle that they have recently instituted and are going on. I believe that they have got high results—or analyses rather—from Bengal coal.

Maintenance of quality.—The middlemen are to a large extent, I think, responsible for the iniquities imputed to the Bengal coal trade. I do not say that all middlemen are alike. I think that a certificate system would to some extent restore the confidence of consumers at this end who are dealing with a colliery. As soon as the middleman comes in, interference occurs and the consumer cannot be certain that he gets the real coal he has bought. That is the feeling at any rate. The same thing would of course apply to Natal coal. The coal may be diverted on its way from the bunder to destination and another coal substituted.

We import the coal ourselves, sell to two or three big dealers and they sell to the mills. As regards the check which we exercise, the coal is stacked in certain definite stacks after being landed, and we can see that the coal imported by us actually starts from bunder for its destination, but we cannot check it any further. For the Bombay Steam Navigation Co. last year and this we imported largely ourselves. The danger as regards the quality of Bengal coal lies in what may happen between the colliery and Kidderpore. There is no further chance of substitution once the coal is here and put into our own lighters. We know that we get the coal which has come in the ship, but we are not certain whether there has not been substitution at the Bengal end.

I am speaking of the general position. We ourselves dealing with a reputable firm in Calcutta were well satisfied enough, but I doubt if that is the experience of others. A certificate would I think restore a certain amount of confidence. There are two things to aim at, lower price and better quality. If the Bengal collieries started that, the general *grip* would go round that Bengal is supplying good coal at last at reasonable rates, and the news would spread very quickly. But that is not enough. It would also be essential for the collieries to see to the steady maintenance of quality. It is no use if they merely send occasional cargoes which are up to quality.

The big consumer who takes a whole cargo direct from ships knows that he gets the quality despatched from Calcutta. But if the coal goes to a dealer who stacks it on the bunder, when a month later a mill asks for that particular coal off the bunder, is it sure of getting that particular coal?

Natal coal suffers from the same disability also. But starting with a better quality it does not deteriorate so badly though it may deteriorate at the same ratio. If consignments of Natal and Bengal coal both lie on the bunder for two months, at the end of that time, the Natal coal would be left the better.

I can see no measure which could be brought in to check this sort of thing. I agree that to buy on calories would check a good deal of it if the tenderer were penalised when the quality fell off. The system now followed is that mills are content if results in boilers, furnaces, etc., are generally good: if the results are bad, they turn on the seller with the complaint that the quality is not so good as it was.

(*To Mr. Whitworth.*)—If Bhulan Bararee or Standard were properly screened and delivered in good condition, there would be about 5 per cent. difference between it and Natal. Standard coal in pre-war time was very much liked. For 2 or 3 years the Hall line bunker contracts actually stipulated for Standard only. Also it was taken by our Kohinoor Mills and they were satisfied.

A really good standard of Jharia well screened would get the percentage down below the 10 per cent. on Natal. I have heard one or two opinions which confirm this.

It is correct that loading at Kidderpore is to blame, and that screening and the use of a picking table can secure a better Bengal coal.

It is, I think, acknowledged that, no matter how good your Bengal coal is, it is not up to the level of Natal. If the opposite to this is really the truth, I can only say that as far as consumers here are concerned, seeing is believing, our opinion of Bengal coal is based on bitter experience.

(*To Mr. Wadia.*)—Bengal coal was going strong in 1924 when I came out first. Collieries then frequently made direct contracts with mills and delivery was made through a Muccadam under the control of the buyer.

Before the war, mills generally were satisfied. There was no great grouse. If quality had kept up, I think people here would have gone on using it. During the war rolling stock was needed in foreign countries for prosecuting the war and was exported from India, and simultaneously shipping was taken away from ordinary trades and used for the transport of troops. Besides that, all the best-quality coal was commandeered by Government or sold to railways, and the millowner in Bombay merely got remnants. After the war, there was the Coal Control, under which certificates were given to the mills but wagons were often unobtainable by them, while dealers and middlemen got wagons. Having got the wagons, the middlemen used to bring in "muck" calling it either Bengal or Best Bengal coal, but being careful not to name either the seam or the colliery, and charging any price which they might wring out of the wretched consumer. I cannot remember how high the prices went, but I can fully accept Mr. Wadia's statement that they went to over Rs. 100 a ton. All these causes brought Bengal coal into disrepute.

After the war when control had been relaxed, the quality sent to us was still bad, and apparently the Bengal despatcher had the idea that any stuff would do for Bombay. It was still a case of the best Bengal coal being taken by Government and the railways, and Bombay used to get anything that was left. Also the wagon shortage still continued. It is now better than it was, but subject to correction, I think it will be some time before the supply is adequate. That is why the Government of India issued a rule that any ship's bunkers must come round by sea and not by rail, and this was followed by the cry that sea freight was high and tonnage scarce. (*To the President.*)—The sea route is the natural route when ships are available. Before the war almost everybody got coal by sea, including the ordinary mill dealer, the small consumer and ship bunkering firms.

(*To Mr. Wadia.*)—Since the war, the quality of Bengal coal has not been as good as in pre-war times. I do not know if any Bengal mines are prepared to sell coal on certificate. If a proper certificate is given and if freight is low, I agree that that would be the first step towards Bengal coal re-establishing itself in Bombay, but this must be followed by practical experience that the quality of the coal is being maintained. In any case it will be an uphill job.

Freights.—(*To Mr. Wadia.*)—Freight was very cheap in 1904. I have seen it in bad times down to Rs. 3-8, and Rs. 5 or Rs. 6 was considered a good rate. The old idea was that a tramp would come round to Bombay from Calcutta to get home freight and would take a low rate. I think that the B. I. had to quote the same rate in order to compete. The present

freight from Calcutta is Rs. 7 to Rs. 7-8-0. Last year it was sometimes at Rs. 10.

For Cardiff the last quotation was 12s. 9d. and Natal varies between 12s. and 14s. according to demand and market rate. So with 12s. equivalent to Rs. 9 at the present rate of exchange, freight from Calcutta to Bombay is nearly the same as from Cardiff or Natal. The balance is only slightly in favour of Calcutta.

Prices.—(To Mr. Wadia.)—The price of the best Natal coal is now about 29s. 3d. c.i.f. For Welsh coal, there are no recent quotations: I should put the price at about 38s. The Transvaal coal is a little inferior to Natal coal: there is a difference of about 1s. 6d. or 2s. There is a little difference in my opinion between Transvaal and best Natal coal.

You must add Rs. 5 on to the c.i.f. price of Rs. 19 to get the price for coal delivered into lighters, and it would probably come up to Rs. 25 for delivery at the mills.

Landing at the bunders costs between Rs. 2-8-0 and Rs. 3. It is a varying figure depending on the cost of lighter-hire which again depends on the competition for lighters. Then for transport to the mill from the bunders, you may take from Rs. 2-8-0 to Rs. 3-0-0 although I think that these are high in these days of quick motor transport and are capable of reduction. The charges for carting and landing Indian coal would be the same as for Natal. Taking the c.i.f. price of Natal coal at Rs. 19, I would say that the best Bengal coal must be put on the market at about Rs. 17 c.i.f. or Rs. 23 delivered in mills.

Cardiff may work out at about Rs. 31 delivered at mills. Between Natal coal at Rs. 25, Bengal at Rs. 23, and Cardiff at Rs. 31 some mills would prefer Cardiff coal which gives better results and goes a longer way. But others would prefer Bengal coal of which the consumption is higher than either Natal or Cardiff. But the preferences of the mills differ a lot. Some would prefer to mix other coal with Cardiff. I should think that they would do best by mixing Cardiff and Bengal. Natal is too good a coal to mix at the price.

We usually sell Natal coal at the bill-of-lading weight less 2 per cent. in lieu of weighing. We have weighed occasionally and found that the 2 per cent. is rarely exceeded and often is not attained. So this arrangement pays the buyer. I would put the deficiency of Bengal coal at an average of 4 per cent. on ships' bill-of-lading, Kidderpore weights, as contrasted with weights shown by weighing here.

The methods of weighment here may be antiquated, but they are common to both Bengal and Natal coal. I think that Bengal-shipment weights are not so accurate as those from South Africa. The Captain of the ship can approximately gauge what is the quantity on board his ship by looking at the draught, but the actual weight as shown by weighment often differs. But this loss on board the ship is rather out of the hands of the Bengal coal owner. The appliances at Durban are, I think, very superior, and have a pull over those at Calcutta. The bill-of-lading weight is based on the weight as shown by wagon-weights, and also as shown by the survey of ship's draught for which the Captain or a certified Surveyor gives a certificate. Sometimes they strike a mean but the safest plan would seem to be to take whichever is less.

(To Mr. Whitworth.)—You can buy your coal on wagon-weights, and every ship is not surveyed. When a ship is not surveyed, you would go by the wagon-weights. As a rule the Captain wants a certificate because he disbelieves the wagon-weights. This is another reason why Natal coal is preferred to Bengal: it is additional to the 10 per cent. difference in quality.

(To Mr. Wadia.)—We had some rail-borne coal during the war when our mills did not use the electric drive, and so did the Bombay Steam Navigation Co. At one period there was great grumbling as to deficiencies

but I cannot remember the percentage. It certainly was very high and I think was over 5 per cent.

(To Mr. Legge).—I consider a figure of 15 per cent. for loss of weight on coal brought round by sea before 1914 for the B., B. and C. I. very bad and hardly believable. With us if there had been a shortage of even 7 or 8 per cent. before the war, there would have been a tremendous row. I am talking of *ex-ship*, but a 15 per cent. deficiency on the stack up the line is quite believable, for there is wastage at every step, unloading into lighters, unloading at the bunder, loading into the wagons and again discharging to the stack.

I do not say that there is still the same trouble about wagons being obtainable by middlemen and not by the actual user of the coal. The period to which my remarks refer was that just after the war in 1919 to 1921. The system is the same now, but the results are different.

C. N. WADIA, Esq., C.I.E., Mill owner, Bombay.

MEMORANDUM.

The Coal Trade in India finds itself in its present predicament owing to folly, greed and dishonesty.

The Millowners foolishly imagined that the consumers' purse was inexhaustible. Trading on the export-shortage during the war they delivered rubbish instead of coal at enormous prices until every consumer of Indian coal was disgusted with the quality delivered to him and desired to free himself at any cost from the toils of the Indian Coal Trade. I need not dilate on the greed and dishonesty of it, the first of which sent its prices sky-high and then made no attempt to check the middleman or to save the consumer, nor on the bribery and corruption that took place at mines in regard to wagons. Government joined in the merry dance by raising up freight and transport charges without supplying facilities and wagons, and the railway under-officials helped themselves to a tune of 2½ to 5 per cent. of free coal at the consumer's cost. The station-masters and others joined in the loot by breaking up rakes in order to earn overtime money. The wonder is therefore that the Indian Coal Trade exists at all, not that it finds itself in a perilous condition. Take the instance of my mill. We had an excellent steam plant which we should have retained to this day but for what I have above related, and that is the case with most of the Bombay mills. The collieries forgot that although coal may cost at the pitsmouth Rs. 7 it costs four times as much when delivered to the consumer. Any depreciation therefore in quality was more than four times magnified on this account only. If the Coal Trade wishes to regain its past prosperity,

- (1) It must strictly watch the price the consumer pays, and keep it at a minimum,
- (2) It must only demand a fair price on the analysis of coal and not on any stuff they are pleased to forward, and it must take responsibilities and risks which every merchant has to take if he is to deal honestly and continuously with his customer, and
- (3) It must agitate and get Government to supply sufficient waggons and reduce transport charges.

Short of this the Coal Trade has no chance of reviving and will go to the wall without any regrets from its past victims.

(c) KARACHI.*

Messrs. FORBES, FORBES, CAMPBELL and Co., Ltd., Karachi.

WRITTEN STATEMENT, 6TH JANUARY 1925.

There is one aspect of this matter which does not appear to have been touched upon in the questionnaire, namely the effect upon the interests of consumers of coal in the interior of India of any steps which may be taken to stimulate the export by sea of coal from Calcutta to Indian and Foreign Ports. Should it so happen that a reduction in prices for export coal would lead to an increase in prices to up-country consumers, this would be favouring one section of Trade at the expense of another.

D. Steamer freights.

17. **Steamer freights.**—The “Economist’s” index of shipping freights shows the world index figure for October 1924 (the latest available) as 134.43 compared with the basis of 100 for the average of 1898 to 1913. The index figure for October 1924 for India only is 126.59 compared with 100 on the above basis. In view of the general level of prices, compared with pre-war, we do not consider that the present level of steamer freights is too high.

E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—Calculated on the basis of South Wales Coal representing 100, our information is that the other qualities of coal are, in actual practice as regards steam keeping properties in Ocean going steamers, as follows:—

North Wales and Lancashire	8 per cent. less effective.
Yorkshire	8 to 10 „ „ „ „
Durham and Scotch	8 to 12 „ „ „ „
Natal (Grade A)	8 to 10 „ „ „ „
Transvaal (Grade A)	12 to 16 „ „ „ „
Indian (best Bengal)	20 to 30 „ „ „ „

20. **Prices.**—The following are about the current market rates for competing coals at Karachi:—

	Rs.	A.	P.	
North Country	21	0	0	per ton. c.i.f.
Natal (Grade A)	20	0	0	„ „
Transvaal (Grade A)	18	12	0	„ „

21. **How competition can be met.**—It seems to us a question of price, pure and simple. In this connection we may mention that there is no room for second class Bengal coal in Karachi.

F. Grading, inspection and certification of coal.

24. **Grading of coal.**—We are in favour of the grading of export and bunker coal, if possible.

25. **Classification into grades.**—So far as Karachi is concerned, it would be sufficient if coals were graded into two grades, the first grade to contain

*Vide also evidence of Karachi Port Trust in Vol. III.

all coals which can truly be described as "first class" and the second grade those recognised as "second class."

26. Measures to effect grading.—It is a matter for consideration by all concerned in the Trade in Calcutta in conference.

27. Control of grading.—This should be exercised by a grading board of non-officials.

29. Compulsory versus voluntary grading.—We are not in favour of Government intervention.

31. Sale on analysis.—This is a question that only Calcutta exporters can decide. As regards Karachi importers, such a guarantee, provided it were given by an independent authority, would be an improvement on existing methods.

E. A. PEARSON, Esq., Messrs. Forbes, Forbes Campbell & Company, Ltd., Karachi.

(ORAL EVIDENCE—FEBRUARY 11TH, 1925.)

21. How competition can be met.—The whole question is one of price consistent with quality. There is no room in Karachi for second class coal.

Bengal coal suffers now from the consumers' memory of what happened in the old days. The attitude of the Bengal coal owner then may be gathered from the form of sale note of the Indian Mining Association (printed as an annexure). I have underlined the points on which I wish to lay stress in the copy put in. You will see that the whole onus as regards the supply of wagons was thrown on the buyer. Of course buyers on this side of India had no influence to regulate the supply of wagons on the Calcutta side and if the seller found it to his convenience not to supply the coal against his contract he could see that there were no wagons available. If you will look at clause 3 of the sale note, you will notice that if the buyers do not give sufficient instructions the contract for the month is discharged and the sellers are entitled to compensation. On the other hand if the seller fails to deliver he is secured against paying compensation unless the buyer can prove that his default was not due to the shortage of wagons. This is altogether unfair. It should be the duty of the seller to arrange the wagon-supply and the buyers should not have any responsibility for wagons.

There is another point which used to be of importance, though I do not know what conditions are in Bengal now. Suppliers used not to be able to charter a vessel for coal unless half the cargo was down at the docks: to my personal knowledge this frequently prevented business going through owing to the risk of demurrage on the steamer. I think that the wagon supply was at the bottom of this difficulty.

The last Bengal coal brought in by sea that my firm handled was in 1921 and the last railwayborne was in 1922. We never brought coal by rail except when it was impossible to get it by sea because it was always more expensive. I regard import by rail now as altogether out of the question. (To Mr. Legge.)—There is no big shortage on imports by rail, so far as I remember: there was, however, an occasional talk of shortages, on railborne coal.

My firm is now handling practically no Indian coal because our buyers find that the coal from other countries is more satisfactory, taking the price and the quality together. When we used to import for the North Western Railway we had claims on almost every cargo for excess of slack and defect of quality. About twice a week or so I had to go down to Keamari with the Local Store Keeper and Locomotive Superintendent of the N. W. Railway to settle what allowances should be given on this account. The slack was a matter partly of bad loading and partly of no screening. There is no doubt that the Bengal coal trade will be compelled to screen its coal. Foreign coal at the same price not only is of a rather better quality but is sufficiently

screened. When that is so what chance has Bengal coal got unless it is screened?

Shortage in weight.—There is no question of any shortage on South African coal cargoes. This coal is sold on bill of lading weights less 2 per cent. Indian coal sells on the same terms but the buyers of all coals usually keep a very careful check on what they get. Taking our records at random I find that there were the following shortages on Bengal coal actually weighed over weighbridges in 1914 and 1915. We did not weigh all the cargoes received but these shortages may be taken as typical.

4.3 per cent.	2.6 per cent.
2 per cent.	2.3 per cent.
3.8 per cent.	5.0 per cent.
2.0 per cent.	0.0 per cent.
0.8 per cent.	6.2 per cent.
2 per cent.	

In the South African bills of lading the quantity of coal in each separate hatch is given, so I imagine that it is weighed as it is loaded. We never have a complaint about weights of South African coal and though the buyers could not recover from us when they were buying on bill of lading weights less 2 per cent. they would certainly have mentioned to us any considerable shortage.

17. Steamer freights.—The world index figure for shipping freights in the "Economist's" index which was 134.43 in October 1924 (Basis, average 1898-1913 = 100) had fallen to 129.38 in December while the index figure for India only had fallen from 126.59 to 119.76. So it is only 19 or 20 per cent. more than the prewar basis. On the other hand if you take the general figure for prices it was, in December 1924, 220.7 or 120 per cent. above the prewar basis. I regard this as conclusive evidence that the present level of steamer freights is not unduly high.

(To Mr. Tegge.)—One cannot take the level of Indian coal freights only in considering this question. One must lump the round voyage together. Charter freights between Indian ports are not fixed with reference only to Indian coasting freight levels: tonnage is chartered in the open market and the freights are independent of any monopoly for coastal voyages. Occasionally ships which have finished discharging say in Rangoon outside the rice season are available for carrying coal from Calcutta at any freight that covers cost, in order to reach a port where they can pick up a homeward cargo.

20. Prices.—Recent freight rates from South Africa are 14s. for July 1924 and 14s. 6d. for December 1924.

ANNEXURE.

Note.—The portions underlined by Mr. Pearson are printed in italics.

No.

SALE NOTE.

(INDIAN MINING ASSOCIATION FORMS.)

Calcutta—

Messrs.

DEAR SIRs,

We have this day Sold by your order and on your account
 Tons say Tons of free from shale, stone, watermarks,
 dust and all impurities, at the rate of Rs. say Rupees
 Annas per ton loaded into wagons at colliery siding, subject

to the following terms and conditions, of which Nos. (2), (3), (4) and (5) are printed on the back hereof, viz.:—

(1) Delivery shall be given at the rate of per month *subject to supply of wagons* for which the sellers shall indent on the Railway Company upon receipt of the buyers' despatching instructions. Despatching instructions, specifying quantity of coal, place of destination and name of consignee, shall be given by the buyers to the sellers at least each month under this contract bears to the total output of the colliery during the preceding month, or, if so large a number of wagons shall not be required in any month for the purpose of fulfilling the buyers' instructions, the sellers will in such case consign such less number of wagons as may be required. The sellers shall, if required, furnish proof to the satisfaction of the buyers that such proportion of wagons has been so consigned.

(2) The sellers will consign to the buyers or their order against despatching instruction a number of wagons each month bearing the same proportion to the number of wagons they receive during the period for which the buyers' despatching instructions shall remain in force as the quantity of coal deliverable each month under this contract bears to the total output of the colliery during the preceding month, or, if so large a number of wagons shall not be required in any month for the purpose of fulfilling the buyers' instructions, the sellers will in such case consign such less number of wagons as may be required. The sellers shall, if required, furnish proof to the satisfaction of the buyers that such proportion of wagons has been so consigned.

(3) If the buyers shall not give the sellers any or sufficient instructions to despatch in any month the quantity deliverable in such month, the contract so far only as it relates to that month's delivery, shall be discharged and the sellers shall be entitled to recover from the buyers compensation for such breach.

If on the other hand the sellers shall after receiving the buyers' despatching instructions, fail to deliver in any month the quantity sold for delivery in that month, the contract so far only as it relates to delivery and performance in such month, shall be discharged, and *except where such failure shall be due to scarcity of wagons* or to any of the causes mentioned in clause (4) hereof, the buyers shall be entitled to recover compensation for such breach.

(4) This contract will be subject to suspension at the option of the sellers during stoppages or partial stoppages caused by war, or disturbances, or strikes, lock-outs, or stoppage of labour *from whatever cause*, or pestilence or epidemical sickness, or earthquakes, fires, storms, floods or the failure on the part of Railways to supply wagons, or other hindrance beyond the control of the sellers affecting the working of this contract. And the sellers shall notify to the buyers at the end of each month the quantity short delivered and the buyers must within 4 days of receipt of notice from sellers declare whether they are prepared to grant an extension of time for delivery of the proportion overdue, otherwise this portion of the contract shall be considered as *cancelled* and the sellers shall not be responsible for any such non-fulfilment of contract.

(5) Railway Receipts shall be accepted by buyers and sellers in settlement of weights.

(6) The sellers shall in each month deliver to the buyers a Bill or Bills giving full particulars of the quantities delivered during the preceding month, including the numbers of Railway wagons. The amount of such Bill or Bills shall be paid by the buyers at the sellers' Calcutta office within days after presentation of the Bill or Bills, and the failure of the buyers to make any such payment within due date shall entitle the sellers to treat such failure as a repudiation of the contract by the buyers and themselves to repudiate further performance thereof and to *recover* damages for the breach of contract.

(7) All disputes relating to this contract shall be referred to the Tribunal of Arbitration of the Bengal Chamber of Commerce to be determined in accordance with the rules for the time being of the Tribunal. The award may, at the instance of either party, be made a rule of the High Court of Judicature at Fort William in Bengal.

Kindly confirm.

F. COWASJEE, Esq., of Messrs. Cowasjee & Sons, Karachi.**WRITTEN STATEMENT.**

My experience of firms exporting coals from Calcutta has been very bitter, notwithstanding the fact that I have restricted myself to deal with only first class among European firms. If only the contracted qualities, without any admixture of second class coals, be shipped from Calcutta, and if the method of arriving at the weights be up to date, as in the case of exports from South Africa and England and Wales, I do not think that the Colliery Managing Agents at Calcutta would have anything to grumble at and would have the necessity of applying to the Government for imposing a countervailing duty on foreign coals, with a view further to stifle the industries in cities in India, which have to import coal.

The Committee, I hope, will not lose sight of the fact, that notwithstanding the alleged complaints from the Colliery Managing Agents in Calcutta of the loss of markets in other cities in India, the companies have paid better dividends than many of the mines in South Africa and England and Wales. This in itself should convince the Committee that larger profits are obtained by the Managing Agents for their respective companies, even when they complain about the loss of markets.

The Committee will also remember the attitude of the various first class European firms, of not delivering contracted coals during the period of War and soon thereafter, under many frivolous pretexts. Had they been honourable to their engagements, there would not have arisen the necessity for the merchants and consumers in India to turn their eyes to foreign coals.

It may also be very well for the so-called Indian Patriots to clamour for countervailing duty on foreign coals, but these Patriots would be true and faithful to their creed and pleadings if they would put their hands in their pockets, and shell out the difference suffered by the traders and consumers.

M. COWASJEE, Esq., of Messrs. Cowasjee & Sons, Karachi.

(Oral evidence—February, 1925, Karachi.)

There are only two firms in Karachi which actually handle coal for bunkering, namely, our firm and that of Messrs. Edulji Dinshaw & Co. Forbes, Forbes & Campbell also have a depôt and do some business direct, but Dinshaw do all the handling of coal for them. Graham & Co. deal in coal and get in cargoes of it, but we handle it for them.

The amount that my firm handles in a year is on the average of the last four or five years about 70,000 tons: during these years we have handled between 300,000 and 400,000 tons.

The Bengal coal that we used to handle was purchased by us from European firms such as Andrew Yule's, Macneil's, H. V. Low's and Kilburn's, all first class European firms. Our experience of Bengal coal was very bitter. The quality was first-class on paper but not in substance. I mean that the firms used to state in writing that they had shipped first-class coal, but results on consumption worked out differently. Although certain mines were specified, the firms were reluctant to give coal from the first-class mines and would insist on a proportion being taken from other collieries. They point-blank refused to supply coal from individual specified collieries and said that the cargo will have to come from four or five collieries. Of course I recognise that the lack of railway facilities is an obstacle to the whole of a large shipment being despatched from one colliery for one vessel: but even if you want to give them an option of coal from two collieries they say that they cannot do it. They give coal from four or five collieries, and though a small percentage of it may come from the best, most of it comes from the worst mines. Moreover, they always load something from dumps at the docks which may contain

coal of a quality different from that ordered. (*To Mr. Legge.*)—I do not think that all the coal ordered in one consignment from Natal comes from one colliery, but there they have their collieries graded and it does not matter which colliery in grade 'A' supplies me with the coal if I know that the collieries actually are in grade 'A.'

When the coal used to come by rail from Bengal to Karachi it was all satisfactory. I used to know where the coal was coming from because this was shown by the railway receipts which we received for the individual wagons: they used to show what sidings the coal had been loaded at. It was much more expensive to bring coal by rail owing to the high freight. I may say that last year Indian coal was of such poor quality that on receipt of the first cargo out of three which I had ordered I cancelled my order for the other two. (*To Mr. Legge.*)—We got coal in by rail during the war. In my experience there was not very much pilferage. I found that the wastage by railway was less than the wastage and short weight on coal brought by steamer. By rail the shortage was on an average about 2 per cent. while by sea it was sometimes as much as 7. One ship loaded was 600 tons short. I attribute this to the method of giving weights calculated on the displacement of the ship. We always buy by displacement when we buy coal from Bengal and there is no weightment of the coal when it is shipped. There are at least three blind items which throw out the weights as taken by displacement, namely, bunker-coal, stores and water: each of these three may be a little more than what is shown to the surveyor when he is calculating the weight of the cargo from the displacement of the ship. The tendency would naturally be to minimise the weights of these three items in order to get as much freight as possible. It would be of assistance to us if the coal was weighed before it was loaded into the ship: in fact that is what we want. The ideal would be to have facilities for direct shipment from trucks and to have the trucks weighed near the place of shipment in the docks. If the shippers load anything at all from dumps the weight of the whole cargo as taken by weightment of trucks is thrown out.

It would meet the difficulties which I have mentioned if there was a Board which could give certificates showing the colliery and the seam from which a definite consignment came and showing the analysis of the coal in the mine: they would have to certify the coal from colliery to docks. If this were done I should certainly be prepared to look at Indian coal again.

Indian coal has been knocked out by the course of exchange. Natal coal can be got to-day at Rs. 22-8-0 taking a rupee at 1s. 4d. Dishergarh coal is offered at Rs. 19-8-0. There is not much difference really between Dishergarh and Natal coal: it might be 5 per cent. No one would pay Rs. 3 more for Natal coal than for Dishergarh. But Natal coal now with the rupee at 1s. 6d. sells at Rs. 20-8-0 including the duty. Owners are so shy of Bengal coal that they are willing to pay Re. 1 more for Natal coal than they will for Bengal: that is because the quality of Natal coal is uniform. But when the difference between the two coals becomes very large they would certainly go back to Bengal coal.

Another fact which I should like to emphasise is that screening of the coal is very important. The Bengal collieries give us the run of the mine but Natal coal is mechanically screened and this saves us a lot of trouble. If Bengal coal were properly screened, if the quality were uniform and maintained at a high level and if reliable certificates could be obtained for each cargo, the Bengal shippers would get the business away from Natal.

Freight.—Freights from Natal to-day vary from 11 to 12 shillings. To my mind the chances are that freight will go up and that would give another chance to Indian coal. I think freights have touched bottom now. Calcutta coal-freights would not go up so much as South African coal-freights. It does not pay owners to run ships from South Africa to Karachi at 11s. 6d. per ton, but it does pay them to run their ships to Karachi from Calcutta at Rs. 7, because otherwise they would not now be doing it. The ships from

South Africa bring up coal only because they can pick up outward freight here: seeds are now booming in Karachi and hence ships which would otherwise come in ballast take coal from South Africa at low rates. There is no particular line of ships running to Karachi from South Africa. The ships coming here belong to no particular line but would be tramps. The liners will not look at this coal business.

South Africa has never sent to cargo as a speculation to Karachi: they supply coal against our orders only. We place our orders through London where all the South African collieries have their head offices and where the business is controlled. We ask for shipments in certain months and they make offers accordingly: we book our orders six months or so in advance and make provision for stocks.

Three years ago the North-Western Railway invited offers when there was a strike on the Bengal coalfields. We sold them about 50,000 tons and other London firms sold them 200,000. They got in at that time 100,000 tons of Japanese coal: I was told that the Japanese coal for the price was bad: it was something like Dishergarh coal, I understand, and it looked all right but the price was very high. My impression of Australian coal is that it is inferior to good Dishergarh coal. I have had Transvaal coal also and would put the difference between Transvaal and Natal coal at from 5 to 7 per cent. Purely owing to the uniformity of quality, I should prefer to handle Transvaal coal and should say that it is better than Dishergarh. Real Dishergarh coal, if you could get it, would be as good as Natal, but we never see it in Karachi. I think that Bengal collieries can supply as good coal as Natal, but they do not. They seem loath to sell Dishergarh coal without mixture. I believe the output of real first-class coal in Bengal is limited and that other classes of coal may be had in abundance. For this reason, I imagine, they try to push the sale of the latter coals by making judicious mixtures.

(To Mr. Legge.)—Not much coal goes up-country from Karachi which is purely a bunkering port. There are no local industries using coal in any appreciable quantity and no industries up-country. I should put the demand at no more than 100 tons per month.

सत्यमेव जयते

Messrs. EDULJEE DINSHAW, Karachi.

WRITTEN STATEMENT.

D. Steamer freights.

17. **Steamer freights.**—This is a fluctuating factor being entirely governed by the law of supply and demand, and it is impossible to rely upon a level of stable freights over a long period. They will vary with the degree of prosperity of the various countries of the world and their buying capacity. We remember in prewar days having bought freight Calcutta-Karachi at as low a figure as Rs. 2-14-0 per ton and in those days we have paid as much as Rs. 7, it all depending upon the exigencies of the trade. We consider the present ruling freight of Rs. 6 to Rs. 7 a very fair figure.

E. Comparative merits of Indian and other coals.

18. **Comparative merits.**—We have handled Australian, American, South African, English and Welsh in addition to Indian coals. We consider that if real, genuine first class Indian coal were supplied, it would be perhaps 10/15 per cent. inferior to Welsh and fairly well up to the level of North Country coal. It would certainly not be inferior to South African fuels some of which is not fit enough even for filling in purposes. But the difficulty is to get good Indian coal.

19. **C.i.f. prices of Indian coals at different ports.**—With the hypothetical figure of Rs. 8 for Pitsmouth value, and adding Rs. 3-4-0 for railway freight, handling and port charges for shipment at Calcutta, and Rs. 6-8-0 for steamer freight, a fair safe price for good first-class Indian coal at Karachi should work out to Rs. 17-12-0.

20. **Prices.**—North Country coal could be had at about Rs. 21-8-0 per ton c.i.f. Natal (Grade A) could be had at about Rs. 20-8-0 per ton c.i.f. Transvaal (Grade A) could be had at about Rs. 19-4-0 per ton c.i.f.

21. **How competition can be met.**—The Indian Coal Industry must purge itself of some of its obnoxious features, most prominent of these being the uncertainty of quality and absence of screening. When the Coal Industry has once created confidence among its clientele about purity of the quality supplied, attended by a not very heavy over-proportion of slack and small, it ought to pull itself up to the level of the other competing fuels, and once it is able to meet foreign fuels in point of price, we don't anticipate there should be much difficulty in Bengal coal having its previous fields of activity restored to it.

23. **Special assistance to other coals competing with Indian.**—We have not heard of any special protective measures being adopted by other coal producing centres to foster exports of their mines except the South African Government who are reputed to rebate coal meant expressly for overseas. Although this bounty fed coal is undoubtedly cutting into the zones and well-established markets of other fuels, we have not heard any howls against the competition of South African fuels and we fail to see any reason why the Indian Coal Industry should resent it so much.

F. Grading, inspection and certification of coal.

24. **Grading of coal.**—We are most decidedly in favour of grading of coal for export and bunkering.

25. We suggest coal should be divided into two or three classes according to calorific values and low ash contents, so that with these distinguishing labels any buyer of Indian coal would know exactly what he is buying and would not buy a pig in the poke which the present system of designation tends in no way to remove.

26. **Measures to effect grading.**—This is a matter for the trade aided perhaps by State legislation.

27. **Control of grading.**—We would leave grading to be done by an unofficial body because we must confess we are not over enamoured of Government interference in commercial affairs. It should be a voluntary measure and if the trade does not avail itself of this corrective which we are firmly of opinion will contribute in no small measure to its re-establishment in the general bunkering and export trades, it should be allowed to simmer in its own juice and we have no doubt that profiting by the hard knocks which their subsequent experience will give them they will come round to this view.

28. **Inspection and certification.**—(a) We are certainly in favour of a system of inspection and grant of certificates of grade.

(b) We would advocate an entirely outside independent agency of proved probity and technical merit for this purpose; failing that, Government Agency.

29. **Compulsory versus voluntary grading.**—See our remarks on question 27.

30. **Meeting of costs of grading and inspection.**—Nominal charge for grading, inspection and certification should be borne by buyers.

31. **Sale on analysis.**—This would not at all be a bad alternative, but then who is to guarantee the quality and calorific value determined by analysis? The bulk of the purchasing which is done for the bunkering trade has no provision in its system for a chemist expressly to analyse coal.

**HOSHANG N. E. DINSHAW, Esq., of Messrs. Eduljee Dinshaw
& Co., Karachi.**

(ORAL EXAMINATION—FEBRUARY 10TH, 1925.)

My firm is one of the biggest in Karachi as regards coal. The amount that we handle varies: it might be taken as from 50,000 to 100,000 tons per year according to the character of the monsoon.

D. Steamer freights.

17. Steamer freights.—The freight from Calcutta varies from Rs. 6 to Rs. 7: I think that a ship was fixed for Bombay at Rs. 6 but I may be mistaken.

E. Comparative merits and prices of Indian and other coals.

18. Comparative merits.—By North-country coal I mean Tyneside coal. In my opinion, the best Bengal coal is just as good as South African coal. I have used it and speak from knowledge. I do not wish to make any invidious comparisons, but I may say that the coal supplied by certain Bengal firms is as good as Tyneside. At present, however, we are not getting any of it: their idea of price is a little too high.

20. Prices.—I cannot say for certain what is the price of Indian coal here. I have handled none for four years. With the advent of South African coal I found it a much better article to handle. I have gone over from Indian coal altogether for the time being.

The price would be in the region of Rs. 18—Rs. 19 c.i.f. If we get South African coal at Rs. 18-4 or Rs. 18-8 it is not good enough to go for Indian coal, on the general run of Indian coals, at that price.

F. Grading, inspection and certification of coal.

26. Measures to effect grading.—I do not like Government interference of this type in economic things. I do not object to handling coal from South Africa which has been subject to Government interference, because that interference is directed towards purifying the impurities of a bad system. I should like to see the trade do the work for itself. I am against an official Board for Indian coal, but I agree that it would be beneficial if you legislated for India also as was done for South African coal. I should prefer Government not to interfere otherwise. I have put forward alternatives: if the trade will not fall into line and establish quality, let them stew until they come to their senses.

If it were possible to get a certificate showing colliery, seam and analysis of the coal supplied by the colliery, I should certainly be prepared to give Indian coal another trial. But the analysis should be the analysis of the coal as shipped. The analysis of the coal in the mine is no use to me: I want to know what the coal is that I shall be putting into hunkers. The difficulty about getting a representative sample, for analysis, from a shipment, is where grading comes in. Provided that I am satisfied as to the coal having come from the colliery for which I hold the analysis, then the variation in the analysis of the coal actually shipped should be insignificant.

But during the war the Bengal collieries shipped as coal anything that was black. There must be stringency about the certificates that are given: I had my fingers burnt on Admiralty Standard certificates issued by Mr. Church as Chief Mining Engineer.

We want coal that has a label attached to it so that we may know what are the B. T. V.s (12,000 to 13,000) the ash content (13 to 12 per cent.) and the volatiles (25 per cent to 30 per cent.) The figures I have quoted are about what might be got: for it is no use expecting to get over 6,600

calories from a Bengal coal such as you can get in the ordinary run of things.

30. Meeting of costs of grading and inspection.—It comes to the same thing whether the charge for certificates is borne by the buyer or the seller. It would always be passed on to the consumer.

Bunkering at Karachi.—We get back the duty if we tranship the coal direct from steamer to steamer. How far this can be done depends on how you arrange your shipments. Bunkering at Karachi is very precarious, because trade is spasmodic. There are several regular lines bunkering here, e.g., Lloyd Triestino, Hansa, and Ellerman, the last of which has a depot of its own: it is Forbes Forbes Campbell's. I do not think that bunkering is falling off here on account of the high price of coal so much as because it is more convenient to steamers to call at Port Sudan. Port Sudan is now opening as a bunkering port and is cutting out Port Said to some extent: it has the great advantage that the coal does not have to pay high handling charges, and that is why it is cutting into Port Said: but incidentally it is cutting into Karachi also, as ships now bunker for Port Sudan, viz., eleven days' steaming as against Port Said about twenty to twenty-two days' steaming.

Reduction in railway freights to Karachi.—I am very much in favour of a reduction in the railway freight on coal to Karachi. I should then be prepared to get all my coal that way: I did not get all my coal pre-war by rail, at least not for bunkering. It was only after the war broke out that coal came much by rail. I should think that the difficulty about locking up wagons would not apply, if the coal were carried in the slack season. There is certainly seasonal slackness on the North-Western Railway from the end of September to the beginning of April when hundreds of wagons stand in sidings.

(To Mr. Legge.)—I have paid as little as Rs. 11 or Rs. 12 for rail-borne coal to Karachi in 1916, but I think that afterwards it rose to more than the present rate quoted, of Rs. 16-15 per ton, from Jharia to Karachi cantonment. I agree that between this rate and that for steamer-borne coal there is a big difference, but I do not ask that the railway should foot the whole bill: for when we get coal in wagons we know that we get actual weights. I should say that the difference ought to be reduced by half.

Handling coal at Karachi.—(To Mr. Legge.)—Our method of bunkering coal by discharging into lighters and stacking and then re-loading into lighters and bunkering ships in stream is the only one possible here except when we can tranship.

The cost for both ways, landing and re-shipping, varies from Rs. 2-4 to Rs. 2-12 according to the rate of wages paid. We have our lighters and tugs. The ordinary way to avoid stacking would be to have a hulk, but that might prove just as expensive.

Our difficulty is that there is nowhere where the ships could come alongside and bunker after taking on cargo. There is no deep-water wharf such as they have at Sabang. There is only six foot of water in the channel leading to the coal depôts. It should be dredged by the Port Trust, who are performing no duties for us in return for the 6 annas per ton they charge us when coal is unloaded. What *quid pro quo* do I get for the fees that I pay? I quite realise the justice of the charge of Re. 1-2 for coal discharged over wharf, because they do something for their money. But to charge me 6 annas for taking coal from a ship, which pays port and other dues, in lighters, which pay approaching fees for plying in the harbour, to carry coal to our depôts, which pay rent, seems to me unfair. They should do something for us: and, I think, they ought to give us decent water ways.

If it is hoped that rail-borne coal traffic to this port should increase, some discharging facilities will have to be provided: now there is only the railway wharf where there are no special facilities for landing coal. When we were landing coal there, we used to have difficulties in getting it away. Where 18 wagons a day was a reasonable figure the railway would send

down a rake of 50: and they added insult to injury by presenting me with demurrage bills running into lakhs.

Shortage on weights.—(To Mr. Legge.)—Wastage by theft from wagons is small compared with what you find on sea-borne coal, because there is no certainty how much is loaded on shipboard. There are no weighing appliances at Kidderpore such as they have at Cardiff where they have automatic weighbridges to deal with the coal before it is shipped: there you can get your weight sheets any time you like. They are very fairly accurate and there is no dispute about the amount put on board. For coal from Calcutta you have only your surveyor's certificate which is not so satisfactory. The reason for this is an open secret. Every Chief Engineer keeps two or three days' coal up his sleeve against emergencies. The vessel will have two days' spare coal on hand, not shown in the Engineer's log and not on the ship's register: that means that it is shown as part of the cargo on the surveyor's certificate: and the consignee gets short weight to that extent.

Exhaustive tests were made by the North Western Railway of coal coming in by rail: they showed a shortage of .8 to 1.2 per cent. I have never known the loss run as high as 10 per cent. Perhaps 3 per cent. or 4 per cent. would be the figure: and that you get even on shipboard. With every handling there is a loss of coal: we have to reckon on that. But when coal comes by rail we have the satisfaction of knowing that the proper weight was loaded and that the wagon carries that weight less the amount pilfered along the line.

I prefer loading into covered wagons for up-country despatches: with the class of labour that I have here that is much easier than to load open wagons.

What I think so grossly unfair is that the railway should charge freight on coal that has been stolen *en route* by their own people. They ought really to deliver the amount loaded: but they might at least not charge freight on what has been lost by the dishonesty of their own servants.

H. H. HOOD, Esq., Collector of Customs, Karachi.

(Oral evidence—February 9th, 1925.)

Duty, transhipment, and re-export.—There is a fee of one anna per ton on coal transhipped, under notification No. 1082, dated 19th April 1924, of the Central Board of Revenue. Before that coal was not transhipped in Karachi under the provisions of Chapter X of the Sea Customs Act and in practice no fee was therefore levied. Coal was made dutiable only in 1916.

At present the firms prefer to pay the duty and afterwards when the coal has been transhipped claim the drawback of $\frac{1}{4}$ ths: drawback is admissible in such cases because the coal has not gone out of custom's control and is consequently identifiable. If the firms knew beforehand how much coal they would tranship from vessel to vessel they could pay the transhipment fee instead of following the drawback procedure.

If the coal is landed on Bala (or Bunker) Island it gets no rebate of duty when put into bunkers. Drawback on re-exported coal was declared not to be admissible in Government of India, Commerce Department letter No. 2840, dated 2nd June 1922, to the Finance Department of the Government of Bengal, on the ground that coal is not capable of being easily identified within the meaning of section 42 of the Sea Customs Act.

At present the ship's agent declares the whole cargo, as in the manifest, and at once pays the duty on it. Subsequently we adjust it as so much (1) "transhipped to foreign-going vessels," (2) "transhipped to their own bunkers," or (3) landed. But if any one prefers not to pay the duty when he intends to tranship coal, we have the transhipment rules to cover such transactions. No one worries about it in practice because the amount paid is the same in either case.

Bunker coal.—We keep no separate statistics for coal put into bunkers. They were kept for a time while the coal control was in force. We used then to supply the Commercial Intelligence Department with statements showing how much Indian coal was bunkered, but we stopped doing so some two years ago.

**E. L. PRICE, Esq., C.I.E., O.B.E., of Messrs. Cooper & Co.,
Karachi.**

(Oral evidence—Thursday, 10th February 1925.)

My firm does a big business in coal. During the past 20 years we have handled over one million tons but we have not kept the detailed records. Between 1904 and 1914 the average amount handled by us per annum was 70,000 tons: the largest amount was 130,000 tons and we have never handled less than 30,000 to 40,000 tons. Between 1915 and 1921 we handled 266,000 tons of Bengal coal. Between 1921 and present day we have sold and delivered 154,000 tons of coal, none of which has been Indian.

I used to take a strong personal interest in this side of our business. At the beginning of my time out here in 1905 when the railway burnt nothing but coal and when we used to handle big contracts for them, I have sold as much as 125,000 tons of coal before breakfast. It was then all a matter of freights. I used to go down to the steamers in the early morning to see the coal being unloaded. We are not coal merchants, but merely acted as colliery agents for Bird and Company whose agents for that matter we still are. I personally knew Mr. B. A. White and Sir William Ironside and it was very pleasant to work with them: I used to write to them personally if I wanted any defect remedied.

I have experience not only of coal shipped to my firm but of cargoes shipped to other importers in Karachi. My own cargoes did not give any great trouble because day by day I used to keep a note of what was being sent, but generally speaking, I may say, the railway was not treated fairly by the Bengal coal exporters. You must remember that the coal was not used by the railway in Karachi itself but the cargo was distributed to perhaps five or six stations. When coal is loaded by being dumped through the hatch in baskets all the slack coal falls in a heap in the middle of the hold and the lump coal goes to the side. So when a cargo was being despatched to several different destinations some one destination might get all the dust and the smalls while another might get all lump. Messrs. Bird & Company at my request made special arrangements to use shoots when loading so as to avoid getting all the smalls in the centre of the hold and we were thus able to keep the railway satisfied: during the whole time that I was handling the coal my firm was only twice fined on cargoes, to the extent once of 5 per cent. and once of 2 per cent.: I have known other firms to be fined up to 80 per cent.

The climax came in 1908 when the bridge over the Malia River broke down and the railway had to discharge 15 or 16 cargoes at Keamari without being able to despatch anything by rail. They took a stacking ground and stacked their coal at Karachi during the time when despatches up-country were impossible. Sixteen cargoes of Bengal coal were on view simultaneously, two of which were mine. The loco. men came down to see it, and frankly many of the cargoes were muck. I cannot say that one of my two cargoes made too good a show, though the other which was Poniat coal was very good. But one cargo, I remember, of Dishergarh coal so-called was not Dishergarh but poor class Jharia coal and other cargoes also were very inferior. The loco. men who had previously judged Bengal coal only by the coal which they had happened to receive at their own stations were disgusted with the general level of the coal supplied as revealed on this occasion, and the railway largely on this account went in for liquid fuel.

The Anglo-Persian Oil Company were very reasonable with them because they wanted to induce them to use more oil, and before the war started

the whole stretch of line up to Padidanon was being worked on oil. They began by supplying oil at Rs. 28 per ton. Then a 10 years' contract was made at Rs. 32. In my opinion if the estimate is correct that oil is twice as valuable a fuel as Bengal coal the oil at Rs. 32 was as good as coal at Rs. 16 and the change to oil fuel was a good bargain. Now I hear that the price of oil fuel has gone up. Mills burning it have had the price doubled against them and the price to the Karachi Electric Supply Corporation Limited has more than doubled. My notion is that the railway have to pay from Rs. 50 to Rs. 55 for their oil, their previous contract having expired in 1923. Since they took to oil fuel the railway have laid down a pipe-line, have introduced special trucks for carrying oil, and have gone to enormous capital expense in providing facilities for handling oil. The equivalent of the oil that they are using as calculated in coal would be Rs. 26 to Rs. 27 but the market value of the coal now is only Rs. 18. There is therefore no justification for their continuing to use oil fuel near Karachi but they will not change back to coal for two reasons; the first is the convenience of using liquid fuel and the second is that they have committed themselves to such enormous capital expenditure.

Undoubtedly during the war the liquid fuel saved the situation in Karachi. In 1914 we lost two cargoes of coal through enemy action. After that our supplies were as follows:—

	Tons.	
1916	51,000	
1917	68,000	
1918	40,000	
1919	14,000	we could not get more
1920	26,000	that was only about half of what we had bought.
1921	11,000	that was only about one-third of what we had bought.
1922	100,000	non-Indian coal.

and we have been able to place no Indian coal since.

In the pre-war period Bengal coal firms, as I have said, often shipped poor stuff; the supplies were irregular; and the method of loading the coal was extremely careless. They suffered from the idea that the buyers could not go anywhere else for their supplies, and their attitude was that of monopolists.

During the war coal was not good, but it came *viâ* the railway.

After the war, the coal industry in India put up prices for coal delivered at pits-mouth to a very high figure and for coal delivered at destination to a figure out of all proportion, for the reason that there was not sufficient transport available. The buyer had to get a certificate for the coal to be moved before the colliery would consider his order. I always consider that whatever Government does on no account should the onus of providing transport be thrown on the buyer because this enables the seller to repudiate his contract. On one occasion, when they were unable to supply us themselves, Messrs. Bird and Company bought on our account from an Indian colliery-owner at Rs. 7-8 f.o.r.; they were successful in arranging for the supply of wagons but in spite of that we did not get any coal. The seller simply took our wagons, loaded them with the coal and sold it to another buyer at Rs. 11-8 per ton. In August 1921 I spent some days in Calcutta and took up the matter with the firm concerned. They started by denying everything. I proved that they had looted Rs. 4 on my coal and they finally agreed to paying Rs. 37,500 in part compensation for our buyer's loss. Actually I did not succeed in getting any money out of them. The man for whom I had negotiated the contract and who was thus cheated out of his coal has bought no Bengal coal since although I have sold 50,000 tons of other coal to him.

After the war buyers in Karachi had nothing but worry, over Indian coal, until 1921. After that we had no trouble or worry about Indian coal because we ceased to get orders for it. Buyers went over to South African coal and they have had no trouble and no worry since. The quality is good and the shipments are made up-to-date. Who in Karachi would look at Indian coal now? Coal of course is now only a side line with our firm. We have now in the harbour a cargo of Cott's Navigation coal, for which we are Agents, and the good quality of it will be apparent on inspection.

Buyers do not want *Government* grading or *Government* certificates. The name of *Government* stinks in the nostrils of Karachi. *Government* have been the excuse for defaults all through. They were to blame about the whole difficulty as to wagons. *Government* certificates for wagons were worth nothing and this was at the bottom of all the trouble. There is always a tendency in India to ask *Government* to interfere in everything but I say the less *Government* do, the better. Here in Karachi we have a Railway touching a seaport to which the carriage of coal by sea is cheap and yet they are burning foreign fuel brought in from Persia. Round Attock they are burning coal although they have found oil there. One would think that they ought to bring their oil fuel engines up to Attock where Indian oil is available and use their coal-burning engines near Karachi where Indian coal can be brought in cheaply by sea.

As regards certificates being given by the firms selling the coal, in most trades firms are careful to develop a good-will: but the Bengal coal-owner seems to have been careful to develop ill-will. However, I think that a properly organised Coal Association with its own Inspectors, officially recognised, making surveys on the same lines as Associations in England or Chambers of Commerce in India, might do some good. The only hope is in *trade* certificates. Unless the coal trade organise itself without *Government* interference there is no hope for it. If *Government* takes over the work of certifying coal the certificate might again be a shield behind which the dishonest seller could repudiate contracts. I speak in the light of my experience. It is most unfortunate but a *Government* guarantee does not appeal to the business man and, if no other form of guarantee is possible for Indian coal, buyers will go to another market.

It has several times lately been a very close thing between Indian and other coals. More than once it has been a question whether I should get an order for Indian, Durban or English coal and I think it was decided by the sentimental factor against Indian coal. The recollection of the ill-treatment received from Bengal coal firms in Karachi influenced the buyers against Indian coal. I think that an indigenous industry is entitled to all legitimate help possible, but I do not think that it should get facilities at less than cost price so that other commodities have to pay higher to make up the difference.

A supposed objection to sending coal to Karachi by rail is that there is no return traffic. That is what is always said, but it seems to me not to be a fact. Here there is salt waiting to be carried across to Bengal and the railways simply refuse to carry it. Small industries up the line would be only too pleased to get their coal direct by rail but the railways ask about Rs. 30 per ton for salt to Calcutta, practically twice what they charge for carrying the coal. If only they were certain of return freight from any part of this side of India the railways could afford to reduce the cost of coal freight. At present small people repeatedly get coal from Karachi on this side of Lahore.

(To Mr. Legge.)—There is no great pilferage on the all rail route. Weights turned out very well. I found that there was very little loss when I tested the weights by weighing wagons every now and then.

Steamer freights.—Steamer freights from Durban are very little more than from Calcutta. I have not got the charter party for my last consignment but I should put the freight at between 2s. and 2s. 6d. more than from Calcutta. I may mention that the insurance on coal from Bengal is higher

than on coal from South Africa because of the risk of fire. It is very gaseous coal. For Natal coal the rates of insurance are very low because there is so little spontaneous combustion. In the last 5 years out of 24 cargoes of Cott's Navigation coal I have not had one on fire. One handicap on Indian coal is that when ships are coming round from Calcutta during the monsoon the hatches have to be battened down: from Durban on the contrary the holds can usually be ventilated even in the monsoon. Fires are particularly common in coal that has been stacked at the docks before loading, has become wet with rain and has been loaded while damp. As to freight from the United Kingdom there is nothing in it: it is about the same as from Durban.

(To Mr. Legge.)—I do not land coal. I only deliver to the buyer *ex ship*. The buyer usually takes it in the stream though if I sell to consumers on shore they take it over the wharf. The coal arriving by rail is unloaded wherever we want it, usually into some siding, at a Press, for instance.

Comparative merit.—(To Mr. Legge.)—As regards the relative values of coal I have a very good Engineer in charge of two steam boilers and the difference between Indian and South African coal sticks out in all his figures: 20 tons of Jharia he considers equal to 17½ tons of Natal. But he would sooner have 17 tons even of Natal coal than 20 tons of Jharia because it gives him so much less trouble in cleaning. If that is true of a stationary boiler it would be an even more important consideration with a locomotive boiler with which the ash is always more. So for locomotives the handicap against Bengal coal is even greater than for stationary boilers. Undoubtedly Indian coal is more troublesome and is a lower grade coal.

Prospects of Indian coal.—(To Mr. Legge.)—The prospects of Indian coal are spoilt by two things—(1) there are so many mines still being worked although they only produce muck and (2) there are so many unscrupulous people who regard a contract as if it possesses no sanctity. You would have a sounder position if some of the kutchra owners and some of the kutchra agents were ruined.

There is of course good coal in Bengal. For years and years Birds have shipped Poniati coal which is very good. I cannot sell their coal now, not because it is not satisfactory, but because Indian coal will not sell here. Their prices have been cut to the bone and lately their coal was the cheapest tendered, but it was not even considered as against English coal and Cott's Durban. The prices of Bengal coal are quite reasonable now although of course the 1s. 3d. exchange helps competitors, but the obstacle is the recollection not only of the poor quality of the coal but of callous treatment from the coal-owner. It takes a life-time to build up good-will, but you may lose it and earn ill-will in half an hour. The ways in which contracts were made but not fulfilled after the war and in which markets were let down were simply madness.

(d) MADRAS.

Lieutenant-Colonel BRADFORD LESLIE, Chairman, Madras Port Trust.

WRITTEN STATEMENT.

Facilities for handling coal at Madras.—Coal can be discharged with a vessel's own gear directly into wagons, for despatch over neighbouring railways, at the east and the outer quays of the harbour. But at the latter quay this can be done only in fine weather. Discharge of coal at the other quay berths of the harbour or at moorings involves double handling. In the case of the south and the west quays, the railway line on the quays is too far away for vessels' gear to plumb directly into wagons. It therefore becomes

necessary first to discharge coal on the quay and then to load it into wagons. This necessitates an extra sum of four annas per ton for the additional handling. At moorings the vessel discharges the coal into lighters and from lighters the coal has to be loaded into wagons. The big hydraulic cranes on the west quay which can plumb vessels' holds are not used for discharging coal as vessels are generally berthed at the east or south quays or at moorings.

All vessels discharging coal whether directly at the east or at any other quay or at moorings require wagons for the conveyance of their cargoes.

Coal can be sent out of the harbour, directly on landing, in wagons supplied by neighbouring railways or can be kept in dépôt in the Trust's premises. A yard, measuring 222,020 square feet and divided into 25 plots of different areas, has been provided in the Trust's premises for the storage of coal and it can accommodate some 56,000 tons of coal if stacked to a height of 10 feet. Rent for the plots is charged at the rate of 2 annas per diem for each 1,000 square feet or part thereof allotted. The Trust has also provided wagons of its own for transporting coal from site of landing to the Coal Yard. Wagons are hired at the rate of Rs. 15 per wagon per midnight-to-midnight day of 24 hours or part thereof. Wagons are hauled, on behalf of hirers at the rate of Rs. 6 per 23-ton broad gauge wagon and Rs. 3 per 12-ton broad gauge wagon per each loaded trip. These haulage rates apply only for work up to 9 p.m. After 9 p.m. a locomotive is hired to the hirers of wagons for hauling wagons from site of landing to dépôt at the rate of Rs. 16 from 9 p.m. to midnight and from 9 p.m. to 6 a.m. the charge is Rs. 32. This hire charge for locomotive power is exclusive of the overtime fee of Rs. 5 per hour charged by the Trust for allowing vessels to work at nights.

The average rate of discharge at quays works out to 12 to 14 hundred tons in 24 hours and at moorings from 800 to 900 tons.

The annexures attached show (1) the coal imports into the Port of Madras during the past five years and (2) the nature of the fees levied on a vessel discharging coal and on the cargo from the time of its landing up to the time of its despatch from the Trust's premises.

(1) *Statement of coal imports into the Port of Madras for the past five years ending with 1923-24.*

	1919-20.	1920-21.	1921-22.	1922-23.	1923-24.
	Tons.	Tons.	Tons.	Tons.	Tons.
Imports by rail (a) . . .	120,687	38,259	3,535	531	21,127
Do. by sea	78,774	178,922	260,033	253,505	267,547
Railway coal transhipped from broad to metre gauge wagons in the harbour (b).	62,123	33,918	908	214	21,205

(a) Pays harbour dues of 8 annas per ton in addition to the payment of harbour terminal charges of 3 pies per maund or annas 6-9 per ton.

(b) Does not pay harbour dues but pays only harbour terminal charges.

(2) *Statement of charges paid by way of dues chargeable on a vessel and on her cargo at the Port of Madras.*

S.S. "Binfield" from Calcutta which arrived at 7-25 a.m. on the 27th October 1924 brought 7,435 tons of coal for the South Indian Railway and was berthed at the east quay for the discharge of her cargo. The vessel sailed at 4-55 p.m. on the 4th November 1924 after completing discharge of her cargo.

Average daily output 1,240 tons during the 6 days the vessel worked, a day being taken as 24 hours.

A. CHARGES ON VESSEL.

Paid to port office.

	Rs. A. P.
(1) Port dues at 9 pies per net registered ton of vessel (the payment exempts the vessel from similar payment for a period of 60 days)	*148 2 0
(2) Mooring fees (levied whether berthed at a quay or at moorings) Rs. 90 for the first day and Rs. 30 for subsequent days for occupation of berths in the harbour (nine days)	*330 0 0
(3) Pilotage fees at 8 pies per ton (night pilotage 2 pies extra for either inward or outward) and sternfast boat hire Rs. 3	*134 10 8

Paid to Customs Department.

(4) Customs overtime fee for work on the 5 nights the vessels worked at Re. 1-8-0 per hour	90 0 0
(5) Madras Coast Light dues amounting to Rs. 148-2-0 paid on the 8th October 1924 exempted the vessel from further payment until the 7th November 1924 (rate 9 pies per ton) . . . . .	...

B. CHARGES ON COAL.

Paid to port trust.

(6) Harbour dues at 8 annas per ton	3,717 8 0
(7) Quay dues at 4 annas per ton (the dues are not payable if vessel were berthed at moorings)	1,858 12 0
(8) Overtime fees to Port Trust staff for the 5 nights the vessel worked at Rs. 5 per hour	300 0 0
(9) Hire of locomotive for the 5 nights for hauling loaded wagons away from site of discharge at Rs. 32 per night	160 0 0
(10) Harbour Terminal charges for hauling loaded wagons over the Port Trust line up to the place at which loaded wagons are handed over to neighbouring railways for carriage over their railways, at 3 pies per maund or annas 6-9 per ton. (This does not include freight charged by railways)	3,162 8 0

PAID TO LANDING CONTRACTORS.

(11) Landing charge inclusive of harbour dues, quay dues charged by Landing Contractors is Re. 1-14-0 per ton. Deducting 12 annas for harbour dues and quay dues already separately shown, <i>vide</i> items 6 and 7, landing charge at Re. 1-2-0 per ton amounts to	8,364 6 0
(12) Stevedoring charges estimated to amount to 8 to 12 annas per ton is said to be included in the ocean freight . . . . .	...
	<hr/> 18,265 14 8 <hr/>

or an all-round rate of Rs. 2-7-0 per ton on the manifested tonnage.

* Paid by the steamer.

Note (1).—If the vessel had worked on Sundays or closed holidays it would have paid Rs. 200 as customs penalty fee for each Sunday or closed holiday.

(2).—The Customs overtime fee for Sundays and closed holidays, which is exclusive of the penalty fee, is Rs. 2 per hour and will be levied in addition to the penalty fee for working on Sundays and holidays.

(3).—Port Trust overtime fees for Sundays and gazetted holidays. Rs. 10 for half day from 6 A.M. to noon or from noon to 6 P.M. and for a full day, 6 A.M. to 6 P.M. Rs. 15. For night work the fee is Rs. 5 per hour as on ordinary nights.

The above statement relates to cost of despatch of coal by wagons when landed directly into wagons by means of ship's derricks, which operation is only possible at the east and outer quays of the harbour.

If the coal is required to be stacked in the harbour premises on stacking grounds set apart for the purpose for which rent is charged at the rate of 2 annas per diem for each 1,000 square feet or part thereof allotted, then instead of harbour terminal charges incurred above (*vide* item 10) hire of wagons for transporting coal from site of landing to place of stack and haulage charges will be incurred. Hire of wagons amounts to Rs. 15 per wagon per midnight-to-midnight day or part of such day. Haulage costs Rs. 6 per 23-ton broad gauge wagon and Rs. 3 per 12-ton broad gauge wagon for each loaded trip, but the haulage rates apply only for work up to 9 P.M. After that hour importers will have to hire a locomotive from the Trust at the rate of Rs. 32 per night. In addition to hire of wagons and haulage, an additional 4 annas per ton is payable for unloading wagons at place of stack. If coal landed and stacked in the harbour premises is eventually despatched to up-country stations, the harbour terminal charge of 3 pies per maund or annas 6-9 per ton will also be leviable.

सत्यमेव जयते

(Oral evidence—December 22nd, 1924.)

Imports of coal into Madras Port.—The imports by rail shown in the annexure to my written statement are brought into the harbour in broad gauge wagons to be transferred there into the narrow gauge wagons of the South Indian Railway, except a certain proportion which remains in the harbour for bunkering. It will be noted that nowadays practically everything comes in by sea and very little by railway: the reason is that freights are down. In 1919 when imports by rail were large there was a shortage of shipping and freights were very high. Now we have got back to normal.

Handling facilities.—We are contemplating the construction of additional berths for unloading coal from steamer direct on to quay; in two years time we shall have an additional berth ready. The two berths that we have now are almost always sufficient: it is rare for us to get more than two steamers in at a time with coal: the South Indian Railway usually arranges not to have more coming in together. To-day there are three steamers discharging coal in Port, and in consequence one of them is unloading into lighters in stream. But this is not one of our regular coal steamers: it has come in with a consignment for Binney and Company from Calcutta.

No bunkering is done direct from one steamer to another. It is usually done direct from wagon by hand labour: the cost for this would be about Rs. 2 per ton but the work is done by contractors employed by the steamer agents and we do not know the exact figures.

I think labourers here earn about Re. 1-1 per day for men and half that for women. The pay is good but they are good workers. All labour is

supplied by contract except for a permanent gang of 200 men whom we keep for odd jobs.

Steamer Freights.—Freight from Calcutta to Madras is now roughly Rs. 5-8 per ton.

Oil fuel versus coal.—Oil fuel is supplanting coal to some extent. The Port Trust, I may mention, has converted everything possible from coal to oil: and, taking the coal saved as being nominal second class at Rs. 25-8 a ton, they have saved about Rs. 15,000 already by doing this. I shall obtain for the Committee figures as to the amounts of liquid fuel bunkered. Some large B. I. steamers bunker oil here, filling up with 500 tons or so on their way up to Calcutta.

The Chief Engineer of a mill in Madras.*

(Oral evidence—22nd December 1924.)

My experience of coal is almost exclusively confined to its use for power production in generating stations in mills and other factories. I have not much experience on the mining side although I have worked on certain collieries in South Wales.

Comparative merits of Indian and South African coals.—I have made certain experiments with South African coal as compared with Bengal coal. From the point of view of the Madras consumer I find that Bengal coal is not satisfactory. It is a very costly coal to use unless it is mixed with the local Singareni slack coal. The coals which we have tested are Raniganj, Bogah and Jharia coals, but I cannot say from what pits the different consignments were supplied; I only know them as supplied to us by Jardine Skinner & Co. I have not brought any figures to show the results of the tests, though I have graphs here which will show the effect of mixing local coal with Bengal and Natal coals on coal consumption in the mill. It will be seen that the cost of producing steam has decreased although the amount of coal used has increased.

I cannot state exactly what quantities of coal are supplied to us each month. The quantity received varies greatly. The mills now use on an average 1,750 tons a month but in February 1923 we were burning 1,250 tons only of which 1,100 was Bengal and Natal coals. The increase is due to our burning more Singareni slack coal and also in part to alterations in the mill. Since supplies of Singareni slack coal became available we have used more and more of it. Supplies of it are now fairly steady.

We are now burning 3rd local coal to 3rd Bengal or perhaps even more than that. The average for our monthly consumption on the past 12 months is as follows:—

	Tons per month.
Best lump coal	450
Singareni slack coal	1,300

The best lump coal is chiefly Bengal coal, of which the monthly consumption is nearly 330 tons, and South African with an average of 117 tons a month: this figure includes also a negligible quantity of Natal coal, only 29 tons during the year. By far the greater portion of the coal used is Singareni slack.

I have tried all these coals separately. Transvaal coal was much better than the Bengal coal that we get. The great advantage is the smaller per-

* The witness asked that his name should not be published.

centage of ash which works out at 18 per cent. on actual tests of a week's running. With Bengal coal, however, the percentage of ash went up to as much as 80 per cent. and the average would be 24 per cent.

As regards prices in July 1922 these were as follows per ton:—

	Rs.
Natal coal	32
Transvaal coal	26
Bengal (average)	24
Singareni slack	14

We have tried Singareni lump coal, and on a test of one week found it for our purposes better than Bengal coal.

We have taken into stock practically no Transvaal or Natal coal since July 1922, and I do not know their present prices.

When Transvaal or Natal coal is used in mixture with the Singareni slack the advantage which they present over Bengal coal practically disappears. The reason for this is that the increased ash percentage from Bengal coal, which is so important when they are burnt separately, practically disappears when they are burnt in a mixture; the difference then is only $\frac{1}{2}$ to 1 per cent. Unless the coal is extremely bad it does not make much difference if used in a mixture. Some consignments of Bengal coal were very bad—their quality varied very greatly about 2 or 3 years ago but runs much better now.

As regards comparative quality of the coals that we receive we find Raniganj coal is not as good as Jharia. Transvaal is very much cleaner than Bengal coal. I have no figures with me to show what the difference is. I have not had this coal analysed because we merely bought consignments to keep the mills going temporarily. Singareni lump coal gave better results on tests especially as regards smokelessness than the average of our Bengal coal. As to the prices of the Singareni lump coal, that quoted was Rs. 17 or Rs. 18 per ton which was very low and which would have given it a great advantage over Bengal coal, but it is probable that in fixing up a contract we should have to pay a higher price. The price of Bengal coal at that time was Rs. 24 per ton. We have not tried first class Indian coals and we do not know what first class Indian coals are like.

The quantity of Singareni slack coal varies very greatly from time to time. At one time last year we could get only 200 tons a month but now it is coming forward in quite large amounts.

Certification of coal.—The grant of certificates of quality would not, in my opinion, make very much difference. When we have bad coal and have received delivery we are committed to using it and cannot send it back; indirectly it would be to a certain extent an advantage. It would keep the seller up to the mark perhaps. A few years ago we had to protest very strongly about the Bengal coal that we were receiving and this made a marked difference in the quality of subsequent consignments.

Fires.—We have had one or two fires in South African coal but it does not give us much trouble in this respect; we have had no troubles as to fires with Bengal coal; and we have had most fires with Singareni slack coal. Fires however in this class of coal are not active and are not easily dealt with.

THE MADRAS CHAMBER OF COMMERCE.

WRITTEN STATEMENT.

The Madras Chamber of Commerce has decided not to tender oral evidence before the Committee, but to confine itself to a general expression of opinion in connection with the coal trade of this Presidency. The Committee of the Chamber have come to this decision as they are not in a

position to deal with the possibility of effecting economies on the Bengal coalfields or in the transport to and the handling charges on coal at the docks and coal depôts of Calcutta. Questions relating to the grading, inspection and certification of coal, and pooling arrangements between producers or sellers also do not affect Madras. The only concern among consumers in this Presidency is to obtain supplies of coal of reasonably good quality at a reasonable cost. In the period of adjustment after the war considerable quantities of foreign coal were imported into this Presidency owing, principally, to the difficulty in securing an adequate supply of wagons for the carriage of coal from the Bengal fields, combined with the high level of steamer freights ruling from Calcutta to Madras. Conditions, however, are gradually returning to normal and it is now possible to import Bengal coal into Madras on more favourable terms than from South Africa. It is practically impossible to furnish comparative values of South African and Bengal coals as the quality of Bengal coal imported into this Market varies to a much greater degree than imports of South African coals, *viz.*, Burnside, St. George's or Witbank. It is generally accepted, however, that good Bengal coal compares favourably with Natal although at equal prices preference would probably be given to the latter as deliveries, as a rule, contain a smaller percentage of fine slack than is found in the bulk of Bengal coal arriving to Madras.

In this connection it is perhaps superfluous to remark that slack coal is much more difficult to work than a round Nutty coal. When the percentage of slack is heavy, fires must be kept very thin as ordinary draught cannot penetrate a thick bed of fine slack. The Members of this Chamber are not conversant with conditions on the Bengal coalfields, but judging from experience, the bulk of Bengal coal arriving to Madras seems to be delivered in exactly the same state as it is received from the mine. More effective screening would immediately remedy this and would naturally tend to popularise and increase the value of Bengal coal to consumers both in the home and foreign markets.

As regards the Port of Madras, the Committee of the Chamber is of opinion that the provision of a second coal berth which is now in hand will furnish ample facilities for the efficient handling of all sea-borne coal to this Port.

ANNEXURE TO WRITTEN STATEMENT OF MADRAS CHAMBER OF COMMERCE.

IMPORTS OF COAL INTO THE MADRAS PRESIDENCY.

Tons.

(Sea-borne.)

	United Kingdom.	Natal.	Portuguese East Africa.	Japan.	Other Countries.	Total Foreign.	From other Indian ports.	Grand Total.
1919-1920	101	..	..	..	55	156	51,289	51,445
1920-1921	..	..	..	..	..	<i>Nil</i>	184,350	184,350
1921-1922	24,191	19,905	42,101	..	..	86,197	314,812	401,009
1922-1923	14,603	39,549	..	3,252	160	57,564	336,504	394,068
1923-1924	14,463	27,415	13,914	..	11,411(a)	67,203	220,028	287,231

(a) New South Wales.

**Brigadier-General Sir C. L. MAGNIAC, Agent, Madras and
Southern Mahratta Railway.**

(Oral evidence—December 22nd, 1924.)

The statement which I put in to show the prices of different coals here shows them to vary greatly. We have tried both Burnside Natal coal and Witbank. We take Burnside, which is one of the last Natal coals tried here, to be equal to first class Bengal coal: but we get very little first class Bengal coal shipped to us. As a rule Natal coal runs a little better than Bengal, but there is very little in it if we get a really good shipment of Indian coal: the difference might be 5 per cent. or 10 per cent. at the outside. We rarely get a cargo of Indian coal that is not mixed, though sometimes we get a whole cargo of Saltore or Dishergarh.

Both for Madras and Marmagao we find Natal coal to be the best and cheapest that we can buy, but the Railway Board no longer allows us to take it. We often get parcels of Natal coal offered here on advantageous terms, but though it would pay us to accept these the Agent has no longer power to do so. Sometimes the same thing will happen with Bengal coal; then it is a question whether our stacks are full or not.

The cost of bringing coal to Madras by sea from Calcutta is slightly less than that of bringing it down by rail, but the loss in weight is much greater. We never get the full supply shown in the manifest or anything like it. No doubt there is a certain amount of theft from the wagons by the rail route but the total loss is only 3 per cent. By steamer from Calcutta, according to our figures for the actual weights landed in Madras, the loss is 5 per cent. and you must add to this the loss between colliery and docks which runs to $1\frac{1}{2}$ or 2 per cent. that means very heavy wastage. Madras harbour is bad for wastage; it is worse than Marmagao. On the coal from Natal we avoid the double loss: the loss on steamer is about the same as from Calcutta, and, curiously, there is the same difference between the shortages at Madras and Marmagao on Natal coal as there is on Indian. I used to think that the hatches were not completely emptied.

We have practically stopped getting in foreign coal since last year. The last cargo of Natal coal that we have had was in April last: it was held over from the year before. This was a steamerload of 5,000 tons. On August 16th, we got 3,000 tons of Natal coal but that was only part of a special cargo brought up by Bests.

We are now taking Bengal coal round to Marmagao by sea. We had some trouble about this because the Mining Engineer did not take out ordinary commercial shipping papers but official papers of some sort, and the Customs between Marmagao and British territory raised difficulties: but the Customs there have an old standing quarrel with us: they have never been helpful.

The percentage of loss at Marmagao on the "Orna" was 2.44, and it was much the same on Natal coal. In 1921 the Natal consignments showed heavy wastage but in 1923 more coal was delivered in consignments from Natal than had been shown as loaded. On an average we get about the correct amount with Natal consignments.

I should be only too pleased to take more Natal coal, if it were allowed, for the Poona-Hubli section, because it works out cheaper. The Bengal coal gets there by rail *via* Waltair, Bezwada, etc., while from Marmagao there is a short and direct lead.

For sections near Madras, we have had Natal coal and I think it works out cheaper: a recent offer of Natal coal was 29 shillings c.i.f. Our coal bill is very heavy and we have our whole line worked out into sections so as to get the cheapest coal for each section. We have not called for tenders this year, but South African coal used to cost 31s. 10d. or 31s. 6d. c.i.f. Natal coal at 29s. would be a cheaper coal than Indian but I do not

think much is available at that rate. There is always the chance of special rates of freight on ships coming from South Africa in this direction anyhow whether they get a cargo or do not. I should put the standard rate for Natal coal coming into Madras at 31s. 3d. c.i.f., which was last year's figure.

Natal coal makes an excellent mixture with Singareni.

Sea route versus rail route from Bengal.—As I have said the comparatively cheap freight charges by sea do not compensate for the extra loss in weight. But it does not pay us normally to work coal down here by wagon, because it means getting a lot of empties back north again: in slack seasons when the wagons are otherwise standing idle it does pay us to bring coal down by rail. We now unload most of our coal at the quay: it may affect weights but it does not affect costs when we unload in stream: we have a flat rate of Re. 1-8 for handling coal wherever the ship is unloaded. Unloading is much better at Marmagoa where we ourselves work the Port: the metre gauge wagons there have the coal loaded straight into them through shoots.

Stocks and deliveries.—We are the principal users of coal in Madras, along with the South Indian Railway: we use about 8,000 tons a week. One of our troubles is irregular arrivals of coal. At the beginning of the year we received much less coal than we were consuming. At the moment we have in stock 72 days' supply, against normal stocks for 90 days: but there is nothing exceptional about this figure: we should start worrying if it went down to 60 days' supply. In last December our stocks were up to 110 days' supply and subsequently they fell to 50 days'. Our total contract figures are 288,000 tons of Bengal coal and 175,000 of Singareni, but we never get our full contract figures. Recently 20,000 tons were transferred from us to the East Indian Railway by the Chief Mining Engineer. We started a new two years' contract and wiped off all arrears, but practically every colliery is heavily in arrears again. The figures are as follows:—

Company.	Shortage.
Birds	63
Gillanders	90
MacNeills	79
Kanji	57
A. C. Bannerjee	64
A. C. Bannerjee	42
A. C. Bannerjee	81
A. C. Bannerjee	41
Khirgaji Amritlal	62
Total	65-80

Our supplies have not run so short that we have had to ask for explanations of these short deliveries.

Sources of supply.—Our biggest single supply is from Singareni, 175,000 tons. For other coal we used to have a three years' contract, but now we contract for one year at a time. Of Bengal first class coal we take 120,000 tons, largely from the one colliery, Saltore; second class Bengal coal amounts to 159,000 tons, almost all in small lots from different collieries.

"Seaborne coal" in our figures means coal that under contract had to be brought down by sea from Calcutta: this used to be 48 per cent. But we have lately altered the form of our contract: and shall have to cut out this heading: we used to have so much definitely to come by rail and so much by sea, but now we have "by rail or sea" against the whole amount. A good deal is coming in by rail: the whole section north of Madras is served by rail: Not quite a half of the Bengal coal comes in by sea, but it varies a good deal.

We have bought collieries of our own at Bokharo Jarandihi and Joragdihi shared with the Bombay, Baroda and Central India Railway as well as

Karanpura. But the first is the only one working as yet and we are getting no coal from it: the Bengal Nagpur Railway have to build a bridge to it which should be opened this year. The question of acquiring a colliery of our own at Talchira has been held up by a question as to the number of years for which the lease is to be.

Importance of coal traffic on Madras and Southern Mahratta Railway.—

Coal traffic is not unimportant to us. The Kolar goldfields take a good deal. They would take more if they could get it but wagon shortage on the Bengal Nagpur Railway stands in the way. A year ago there were bitter complaints about this from Binney and Company when Mr. Hindley was down here. There are none now but it is possible that now freights are down, they are bringing coal in by sea.

We have never refused traffic *via* Waltair: the restrictions imposed have been put on by the Bengal Nagpur Railway not by us. The capacity of our North East line is 175 wagons a day: for coal alone it might be perhaps 100 wagons, but I cannot say off-hand. We could deal with this number daily if they were handed over to us by the Bengal Nagpur Railway, but of course we should need some warning that they intended to work up to this figure.



ANNEXURE TO ORAL EVIDENCE OF BRIGADIER-GENERAL SIR C. L. MAGNIAC.

Cost of Coal including carriage and landing charges at Madras, 1924-25.

Description of coal.	Cost.		FREIGHT.		Inspection charges.	Other charges by sea including insurance.	TOTAL COST TO RAILWAYS.		Railway freight for public including terminals, etc.	Calorific value.	COST OF COAL ALLOWING FOR CALORIFIC VALUE.	
	At Pitsmouth.	F. O. B. Calcutta.	By Railway including terminals.	By Sea including charges at 1-8-0 per ton.			By Rail.	By Sea.			By Rail.	By Sea.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Bengal coal, I class (Saltore)	10 8 0	10 8 0	12 13 0	8 8 0	0 0 9	0 4 0	23 5 9	22 9 3	13 15 0	100 0 0	23 5 9	22 9 3
Bengal coal, I class (South East Barbomb).	8 12 0	13 0 0	12 13 0	8 8 0	0 0 9	0 4 0	21 9 9	21 12 9	13 15 0	100 0 0	21 9 9	21 12 9
Bengal coal, II class (Hārladh)	6 4 0	9 8 9	12 13 0	8 8 0	0 0 9	0 4 0	19 1 9	18 5 6	13 15 0	70 0 0	27 4 9	26 3 3
Bengal coal, II class (other coals)	5 12 0	9 0 9	12 13 0	8 8 0	0 0 9	0 4 0	18 9 9	17 13 6	13 15 0	70 0 0	26 9 4	25 7 10
Singareni coal	9 4 0	..	6 1 0	..	0 0 9	..	15 5 9	..	9 2 8	65 0 0	23 10 1	..
Natal coal	..	..	..	..	..	..	..	24 1 0	..	..	..	..

* Railway Freight to Kidderpore Docks
 Less Rebate

Rs. a. p.
 4 3 6
 0 14 9
 TOTAL 3 4 9

**P. G. PORTEOUS, Esq., Locomotive and Carriage Superintendent,
and N. CARROLL, Esq., Locomotive Fuel Officer, Madras
and Southern Mahratta Railway.**

WRITTEN STATEMENT.

1. Present procedure.—This railway at present receives coal from Singareni and several Bengal collieries. Contracts for supplies of Bengal coal are being made through the Chief Mining Engineer, Railway Board.

All coals despatched are inspected by the representative of the Mining Department of the Railway Board. It is considered that the inspection of coal prior to despatch to this railway is necessary and should continue, and also that this railway be allowed a free hand in the selection of coals for locomotive purposes and not be tied down to the use of Indian coals only.

2. Comparative merits.—It has been ascertained from actual tests carried out that it is more economical to use Natal coal. At the time when the tests were made the cost of Natal coal at that station was Rs. 28-13-3 per ton on engine and the cost of Indian coal Rs. 20-13-10. Although the Natal coal was actually dearer in price per ton, the result in consumption obtained was a saving of 5 pies per engine mile, and 1 anna and 1 pie per 1,000 gross ton mile. The number of engine miles run last official year was 15,472,655; thus the total saving at 5 pies per mile would have been Rs. 4,02,933. Besides this there would have been a saving in haulage of coal wagons, salaries of fuel coolies, ash pit cleaners, etc.

Moreover Natal coal supplied to this railway has been found to be free of shale and stones, whereas Indian coals contain shale and stones. The average percentage picked out being as follows:—

	Per cent.
Bengal 1st class	0-60
Bengal 2nd class	1-08
Singareni	0-73

It is not possible to pick out all the slate and stones while unloading. If the entire quantity was picked out the percentage would be much higher. Credit is afforded monthly for slate and stones found in Singareni coal, but not for those in Bengal coal. We have picked out slate and stones which has worked out to 7 per cent.

3. Comparative analysis.—The average analysis-results of various classes of coal are:—

	Ash contents.	Calorific value B. T. Us.
(2 coals) Bengal I	14-07	12,447-00
(8 coals) Bengal II	21-97	12,182-62
Singareni	18-36	11,039-55
Natal	18-12	13,184-00

But on actual trials the ash contents were found to be as high as 50 per cent. for II class coals. It is often found necessary to clean fires between stations.

4. Conditions of past tenders.—The conditions regarding quality of the coal as per specifications of tenders with the Bengal firms for supply of coal during the time when Mr. Church was Chief Mining Engineer, Railway Board, were as follows:—

- (1) Only coal actually raised by the contracting firm may be supplied. No bought coal is allowed.

(2) The coal must be of the best quality, either hand-picked or screened and be free from shale or other deleterious foreign matter. Also it must be fresh coal. "Weathered" coal will not be accepted.

(3) Coals from different properties or mines are not to be mixed.

The above conditions were not adhered to during the tenure of the contract and anything that looked like coal was supplied.

5. Proposed conditions for future tenders.—The conditions regarding the quality of the coal required by this railway are:—

All coal supplied to the Railway Company shall be from the direct output and must be screened, and nothing that passes through a screen with bars 1" apart or plates with 1" holes 1" apart may be loaded into wagons for despatch; the screens must be 15 feet long, 4 feet wide, 8" side and at an angle of not more than 35° from the horizontal; the screen shall be operated to oscillate not less than 45 times a minute. The contractors undertake that they should not despatch coal that has been previously dumped or stacked and the coal despatched must be free from sand, stones, shale and other impurities and should be suitable for consumption on locomotives. The Railway Company shall reject all the above mentioned impurities found in the coal and advise the contractors of the quantity so rejected monthly, the value of rejections *plus* freight handling and other charges being deducted from the suppliers' bills.

The contractors to guarantee to supply coal of a certain calorific value according to class under contract.

1st class	.	.	.	.	.	.	13,000 B. T. Us.
2nd class	.	.	.	.	.	.	12,250 to 12,500

6. Particulars of railway requirements.—The following are particulars of railborne coal contracted for during the current year:—

	Tons.	Price per ton at pit's mouth
Singareni	170,000	Rs. 9-4
<i>1st class Bengal—</i>		
Saltore	72,000	Rs. 10-8
South East Baraboni	30,000	Rs. 8-12
<i>2nd class Bengal—</i>		
Hariladih	30,000	Rs. 6-4
Alkusa	36,000	Rs. 5-12
Gonshadih	12,000	
Nichipur	29,000	
Isabella Nudkirkee	40,000	
Joyrampore	12,000	
Godhur	24,000	

7. Particulars of daily consumption.—Average daily consumption of coals is:—

	Tons.
Mail coal	300
Mixed and Goods, etc.	920
Total daily consumption	1,220

8. Losses in transit.—Loss in transit Seaborne and Railborne:—

	Per cent.
Seaborne average (Indian)	3.0
Foreign Seaborne (including Natal)	1.48
Railborne average (Indian)	1.5
Natal Seaborne only	0.74

On issues about 1 per cent. is lost.

**Messrs. T. STANES & Co., Ltd., agents for the Coimbatore
Spinning and Weaving Company, Limited.**

WRITTEN STATEMENT.

E. Comparative merits and prices of Indian and other coals.

The comparative merits and prices of Indian coals, if sold to the standard given in analysis, would be favourable to other coals, but the coals delivered are at all times mixed with other grades and differ totally to the analysis, regarding both calorific value and ash content. The freight per Railway is too high. This point severely handicaps the manufacturer where steam production is a vital question.

F. Grading, inspection and certification of coal.

Quality and nature should be defined; also calorific value, ash content and moisture should be guaranteed. If the collieries would only see that the different seams are not mixed, the nature of the coals, calorific value and ash content would not vary. The analysis of coals purchased varies considerably to that given by the agents before purchasing—in some cases a difference of 2,000 calories, this being a loss of approx. 28 per cent. in the heating value.

The coal "sort" should be defined—whether Bituminous, Anthracite or Semi-anthracite. These properties have a great influence in the production of cheap steam, relative to the draught at one's disposal and also to the efficient working of the boilers.

Coals should be purchased on a sliding scale. The Colliery to state a standard calorific value and the price fixed; any excess of this value should be paid for at a price fixed by the purchaser and seller (so much per 100 calories) and the same amount should be deducted for every 100 calories below. Similarly ash percentage should be fixed and if there were any excess, an amount arranged by both parties should be deducted. These are the terms which all large steam users enforce in Europe and by doing so they get "value for money."

**F. B. WATHEN, Esq., General Traffic Manager, Madras and
Southern Mahratta Railway Co., Madras.**

(Oral evidence, 22nd December 1924.)

Capacity of Waltair.—We have put on no restrictions since the war at Waltair. The only restriction is that we can handle no more than 175 wagons daily, but this figure is not worked up to. This covers wagons of all sorts and will more than suffice for any traffic that we are likely to get in the near

future. In three years' time we shall be able to take over more wagons as our facilities improve. The average number of wagons handed over to us by the Bengal-Nagpur Railway is from 80 to 90 per day. I should like to see more traffic coming down that section. Probably the reason for the restrictions imposed is the existing necessity for slow running over part of the Bengal-Nagpur Railway section north of Waltair, caused by the damage done by a cyclone.

Length of Block Sections.—Between Waltair and Madras some of our sections are admittedly too long but we are putting in an increased number of crossing stations which will improve matters. We have no fixed number of wagons daily for coal and for other commodities respectively.

Increase in train loads.—I do not think that anyone can raise complaints under this head. We now take 1,100 tons with two engines, *i.e.*, 53 or 54 wagons, in one train load over the northern section. South of Bezwada, we can carry a heavier traffic: there are no gradients and the limiting factors are the strength of the couplings and the length of the sidings. On that part of the line we have the control system and so the need for crossing stations is not so great. We can easily move 250 wagons per day on that section: in fact yesterday we handled 270. We cannot justify any increase in accommodation further north to carry more traffic at present. In my opinion it would be useless to provide for 200 wagons of coal per day: the traffic offering would not justify it. I should put the number of wagons available for general merchandise at 30 or 40 per day or at the very most 60, except of course in emergencies. During the war when nothing was moving by sea from Calcutta to Madras, it was calculated that 110 wagons a day of Bengal coal *via* Waltair, in addition to the Singareni coal used would cover the whole requirements of the Madras Presidency for coal: I do not think that the figure now would be very much more.

Transshipment at Arkonam.—I have not heard of any objections to coal being transferred from the broad-gauge to the narrow-gauge South Indian Railway wagons at Arkonam or suggestions that it would be preferable if transshipment were done in Madras. During the war the South Indian Railway took delivery of coal in Madras harbour by arrangement with the Port authorities but they always object to having through traffic booked at Madras.

I think that the wastage in handling coal at Madras would be just as great as it is at Arkonam and that if the transshipment were done at Madras the likelihood of owners sending their representatives to see the coal transhipped there would be very small. It is a fact that the necessity for transshipping at Arkonam results in Bengal coal not being so cheap for some parts of the South Indian Railway as it might be if the coal were sent down direct from Madras; but an important point is that the capacity of the South Indian Railway probably forbids their carrying coal *via* Madras.

Railway rates.—Before our East-coast line was built we had a rate for coal from Madras for coal brought in by sea to Madras, and when we built that line we quoted the same rate at first for coal coming over it. Afterwards we adopted the Railway Board scale and we work coal on this section in conjunction with the Bengal-Nagpur Railway as if we were one railway with them, following the Bengal-Nagpur Railway scale. Steamer freights have recently gone down but personally I should not consider reducing the rate for coal from Bengal by rail to compete with the steamers unless the Bengal-Nagpur Railway pressed for it. My reason for saying this is that we should have the trouble of getting our empties back north. The cause of our not getting traffic northwards to fill our empties is that steamers which come up with 200 or 300 tons of stuff for Madras will fill up the space thus left vacant for Calcutta by taking cargo at practically any price. The railway cannot compete with them; *e.g.*, they have charged annas 4 a maund for carrying salt up to Calcutta whereas our charge by rail cannot be less than annas 8 pies 8. So with coal wagons going back empty you practically double your distance for coal that is brought down by rail. We have perhaps some use for empty covered wagons but we have none at all for empty open wagons.

(e) RANGOON.

J. A. CHERRY, Esq., Chairman of the Commissioners, Port of Rangoon.**WRITTEN STATEMENT.**

Costs at Rangoon.—The charges on coal and coke landed at Rangoon are as follows:—

(1) *River due* annas 7 per ton on all coal and coke landed from or shipped into any sea-going vessel lying within the limits of the Port. The charge is not levied on coal intended for the bunkers of vessels into which it is shipped.

(2) *Landing charge.*—(a) Unless coal or coke is landed on the Commissioners' property there is no other port charge except river due.

(b) If landed on the Commissioners' property coal and coke pay a landing charge of annas 5 per ton.

(c) There is a small wharfage charge for the use of the jetties by lighters. It works out in actual practice to about pies 8 per ton.

(3) *Storage.*—(a) At the Commissioners' coal depôts on the Pazundaung Creek ground for storage of coal and coke is rented at Rs. 2-0-0 per 100 sq. ft. per month.

(b) At Botataung the rent is Rs. 3-0-0 per 100 sq. ft. per month.

(c) Importers can if they desire rent storage accommodation on a daily basis, the charge being annas 10 per 100 sq. ft. per day, but this is never done in practice.

The rent is collected on the area actually occupied on the 1st of each month.

(4) *Despatch.*—(a) No charge is made for the use of the jetties for bunkering launches.

(b) No charge is made on despatches by road.

(c) A siding charge of annas 1 per ton is levied on coal and coke loaded into railway wagons on the Commissioners' sidings.

(d) A shipping charge of annas 5 per ton is levied on coal and coke despatched by lighter.

(e) There would be a small wharfage charge for the use of the jetties by lighters which works out in practice to about pies 8 per ton.

The following may be taken as the average cost to an importer of landing a ton of coal or coke on the Commissioners' premises. It is the average of several sets of figures:—

Item.	Rs.	A.	P.
River due	0	7	0
Hire of lighter	0	14	0
Landing charge	0	5	0
Wharfage	0	0	8
Unloading and stacking	0	11	6
TOTAL	2	6	2

To this must be added say about pies 8 per ton for storage.

Nothing further need be added for coal consumed on shore locally or in bunkers of launches.

For coal despatched by rail add anna 1 per ton.

For coal despatched by lighter add Rs. 1-10-8.

Facilities at Rangoon.—No coal or coke can be landed anywhere in the Port except by lighter. The large bulk of coal and coke is landed at various points on private foreshores and the small quantity landed on the Commissioners' premises makes it economically impossible to provide a sea-going berth or mechanical appliances for handling.

Amounts imported.—Figures of total imports for the last 10 years and of imports by the principal importers last year are shown in the statements below :—

(1) *Imports of Coal and Coke into Rangoon.*

Year.	Total imports.	Proportion landed on Commissioners' premises.	
		Tons.	Per cent of total imports.
1914-15	460,006	32,558	18
1915-16	430,131	89,654	21
1916-17	424,707	75,905	18
1917-18	286,723	79,722	28
1918-19	201,731	69,367	34
1919-20	297,234	44,928	15
1920-21	462,434	86,348	19
1921-22	608,456	79,284	13
1922-23	440,336	68,105	15
1923-24	556,456	65,800	12

(2) *Principal Importers of Coal and Coke in 1923-24.*

Imports.	Coal.	Coke.	TOTAL.
	Tons.	Tons.	Tons.
Burma Railways Co., Ltd.	203,754	1,139	204,893
B. I. S. N. Co., Ltd.	135,416	..	135,416
*Burma Corporation Limited	5,401	38,650	42,051
Irrawaddy Flotilla Co., Ltd.	35,187	507	35,694
*H. V. Low & Company	21,810	..	21,810
Steel Brothers & Co., Ltd.	26,552	..	26,552
*F. W. Heilgers & Company	16,061	..	16,061
*Gillanders Arbuthnot & Co.	15,612	25	15,637
*Port Commissioners (purchased from H. V. Low & Company).	9,385	..	9,385
Scindia Steam Navigation Co.	9,431	..	9,431
Indo-Burma Petroleum Co.	7,159	..	7,159
Bulloch Brothers & Co., Ltd.	1,008	215	1,223
*D. Lackersteen & Company	970	..	970
*Others	491	805	1,296
TOTAL	488,237	39,341	527,578

The above are the figures compiled from river due challans.

The importers marked with an *utilise Port Commissioners' premises.

(*Oral evidence, 28th November 1924, Rangoon.*)

Costs at Rangoon.—When I say that the river-dues are not levied on coal intended for the bunkers of the vessels shipping it, I mean that the dues are only paid once on bunker coal, *i.e.*, when the coal comes in as ordinary cargo.

Facilities at Rangoon.—So far as the Port Commissioners are concerned, coal is an insignificant import into Rangoon. All coal is handled by manual labour and there are no mechanical appliances. The Calcutta suggestion that there should be two tie-up jetties with the object of cheapening coal by Re. 1 per ton, is not justified by the amount that we handle. There would be no saving in cost: charges on the coal handled would not pay interest costs on the capital expenditure. The big bunkering firms would not use the jetties if provided. To justify the installation of mechanical plant, at least half a million tons would have to be handled each year, to judge by my experience with other minerals.

(*To Mr. Ball.*)—There is little scope for any reduction in the Port charges. The river due was reduced from 8 annas to 7 annas last year and it is not likely that we shall be able in the near future to reduce it further. Of the total imports of about 500,000 tons a year, all save about 100,000 tons is taken by three importers—the Railways, the Irrawaddy Flotilla Company, and the B. L.—and these are not likely to change their arrangements. Only the Burma Corporation might be expected to use more coal and I do not think that Bengal coal enters into their calculations. We have no regular Port Commissioners' labour for coal, or at all except under the Chief Engineer. Our labour is all supplied by contractors. I had experience of the departmental labour system in Bombay, and for Rangoon I am sure the contract system is better owing to recruiting considerations; there is normally no difficulty about recruiting labour in Bombay; it turns up of its own accord and if it is scarce at times the crisis is always over before any plan for recruiting is worked out.

There is no immediate prospect of any port development scheme being put into effect here. I drew up a scheme for development when I first joined but this was chiefly to be able to guard against being left short of land. We acquired the land that will eventually be needed but for the present we are only going to improve existing property, joining up wharves and so on. It is one of our difficulties to provide for the coal that we have to handle now—to find space for storage; and there is no proposal for extending the provision for it. The construction of deep sea wharves on the Pegu River was talked about in 1917-1918 when the Burma Corporation expressed an intention of exporting 30 to 40,000 tons of minerals a month; and the Railways would have had their stocks there, as they would to-day if the facilities were provided. There was no question of Burma coal for export. I have heard no opinion as to the merits of the coal being got at Mergui.

(*To Mr. Bray.*)—Lighterage charges of 14 annas cannot be avoided; for the Burma Railways the prospect of getting deep water frontage was what made the Pegu River scheme attractive to them. That would have saved them lighterage charges—but this scheme will have to wait till Burma develops.

18. Comparative merits.—The Port Commissioners themselves use 18,000 tons a year. It is all Bengal coal and almost always has been. They used previously to purchase from the Burma Railways. The quality supplied fell off and it was decided to obtain coal by calling for tenders in 1922. We tried a consignment of Scotch and a cargo of Welsh coal, carrying out tests which showed that for our purposes Bengal coal was the best. The test was carried out at the workshops, the Hydraulic Power Station, and on board two vessels; and it was based on the quantity of water evaporated,

the number of gallons pumped and the consumption of coal per hour dredging per unit of coal respectively. The Scotch coal was for some purposes superior but not sufficiently so to justify the extra cost. We have never had South African coal so far as our records show, and no one, so far as I know, has ever offered it to us nor are cargoes of it put on the local market. I know no one who imports it and supplies are irregular.

(*To Mr. Bell.*)—The point about the Scotch and Welsh coal was that the cargoes were actually offered and we tried it because we were actually getting very bad stuff from the Burma Railways. I think we took two consignments of Scotch but we never tried to arrange for regular shipments from Scotland. No one now with us knows anything of trials of South African coal. We are getting our coal since March from the Universal Coal Company who are supplying Jharia 1st class—actually it is No. 12 seam. The cost landed and stacked is Rs. 22-8 which is rather more than the present market price; we took the lowest quotation consistent with tests. We watch the coal carefully; we have no complaints as to quality.

The Commissioners always keep a reserve of 2,000 tons and in May wanted to renew this. They called for tenders and gave the contract to a firm at Rs. 24-2. The coal supplied by them was used in August and September because another area had to be occupied, and we had continual complaints. It was the same with another firm with which not only the quality but the delivery was bad; three times in the year the Commissioners had to sell them coal from their reserve stock. Apart from the variable quality this is the only complaint that we have against Bengal coal. We bought the one class but did not always get it. The coal found unsatisfactory in August-September was better than the other firm's but it varied so greatly that I am confident of its not being all of one quality; it was a mixed coal. Matters were much worse when we were getting the coal sent down by the Mining Engineer for the Burma Railways. Our present contract is for 12 months. We take a minimum of 1,200 tons a month but at present rates the supplier is only too willing to supply more. He knows how much we are using and maintains his stocks accordingly—he usually has 2,000 or 3,000 tons there. We take it as it is needed, sometimes as little as 25 tons at a time, and he gets paid whenever he likes to send in a bill. As regards screening and washing coal, I have no knowledge of the collieries or their practice.

28. Inspection and Certification.—As to buying on a certificate of quality, it is hard to see what use a certificate would be if the coal were not up to quality. We do not at present buy on the Mining Engineer's certificate. If it were practicable to get a reliable certificate from an outside agency whom we could trust showing exactly what coal was being loaded, and if this did not increase costs against us, we should like to buy on certificate; for at present we are absolutely in the hands of our suppliers.

(*To Mr. Bell.*)—In making our contract, we simply advertise for tenders and then our storekeeper reports on them. We ask for a particular kind of coal but we have no check at either end to insure that we are getting the quality ordered,—at least not till we actually use it. To get an assurance of quality on a certificate that we could trust would be worth a little extra to us,—half or three-quarters of an anna per ton. We do not buy ex-ship but stacked on our land;—the supplier stacks the coal on our land but it continues to be his till we actually take it.

(*To Mr. Legge.*)—Our remedy when coal does not come up to quality is to refuse to take it, and to fall back on our reserve stock. Generally the complaints come in after the coal has been brought into use; and then we have the matter out with the supplier, but it rarely comes to the pitch of cancelling a contract. If there is an excess of dust we refuse to take it. The seller takes the coal from ship straight on to the land. If we were going on a certificate of quality there might have to be a different arrangement.

H. A. CRAIG, Esq., Locomotive and Carriage Superintendent, Burma Railways Co., Ltd.

WRITTEN STATEMENT

A. Possibility of economies on the coalfields.

4 and 5. **Possible savings in stacking charges and wastage from stacking.**—Every handling of coal, particularly soft coal, involves loss in weight but the more serious loss is due to breaking of coal. It is difficult to get coal in Rangoon with less than 15 per cent. small which will drop through a bar screen of $\frac{3}{4}$ " bars with $\frac{1}{4}$ " spacing. The term "small coal" ordinarily means, I believe, anything which will pass through a screen with 1" spacing. Soft coal is so broken on delivery in Rangoon that probably 50 per cent. would pass through a 1" screen and as much as 25 per cent. has frequently been found to pass through a $\frac{1}{4}$ " screen. Combined with this extraordinary amount of dust, much of which I believe leaves the colliery, far too much roof, shale and bad coal is allowed to leave the coalfields because of improper inspection and picking.

C. Possibility of economies at the Docks.

12. **Loading and shipping facilities.**—I am not acquainted with facilities existing. Any measure which will ensure coal from being broken up during loading will be advantageous. At staiths where wagons are tipped the introduction of shoots down which the coal can slide thus reducing the force with which it lands in the bottom of holds has elsewhere proved beneficial.

That the Indian railway wagon-load figures, the Calcutta Surveyor's figures and the Rangoon actual weighbridge figures fall off so considerably is proof that there is room for improvement.

E. Comparative merits and prices of Indian and other coals.

18. **Comparative merits.**—I have experience of English, South African and Bengal coals in locomotive services and consider that Bengal coal can hold its own in India and the East if it is properly selected, picked and handled. It cannot be burned on the same grates as English coal without alteration of the air spaces. The high ash percentage involves much extra work and renders Bengal coal unpopular. From conversation with Marine engineers I conclude that much of the trouble at sea has been due to grates having insufficient air space between the firebars and to the heavy ash. English locomotives have about $\frac{3}{4}$ " air spaces whereas Bengal coal requires about $1\frac{1}{2}$ " air spaces between the firebars. Both coal agents and marine engineers have freely stated that Indian coal has lost reputation badly because low grade coal and coal not properly cleaned of smalls and impurities have been supplied for bunkering at Colombo, Singapore and Indian ports.

F. Grading, inspection and certification of coal.

24 to 31. I think competition in the coal trade unhampered as far as possible by interference is likely to have the best results. As it does not appear to be possible to get coal reasonably picked clear of roof and bad coal and small it does not seem hopeful to get it on the scientific basis of

calorific values. This may be possible for power plants but railways and steamship companies cannot easily check deliveries and keep them up to guarantee of quality or calorific; and the increased cost likely to accompany such a system would probably produce negative results.

Oral evidence, 26th November 1924, Rangoon.

General.—The Burma Railways are the biggest users of coal in Burma, taking about 170,000 tons a year. Before there was a Mining Engineer's Department in connection with the Railway Board we got our supplies by advertisement and public tender with deliveries c.i.f. Rangoon. Later we called for tenders by advertisement but consulted the Mining Engineer before placing the contracts and the Mining Engineer's inspector replaced our coal inspector in India but coal continued to be actually taken over at Rangoon. Since the war we have not publicly advertised our requirements but the Mining Engineer has submitted to us quotations with recommendations: on our acceptance he has done the inspection and arranged the shipping; and it is part of the contract that the coal would be considered as delivered on board in Calcutta and paid for on the Port Surveyor's figures.

It is difficult to compare the two systems, because the two periods are not comparable. The difficulties to be faced in dealing with coal since the war broke out are altogether unlike anything that used to exist; but as we consider that the conditions are now more like pre-war conditions, we are very keen to go back to the old method of purchasing our coal direct,—with the supply Company, giving delivery in Rangoon. The conditions under which we were getting coal from Messrs. H. V. Low & Co. under contract are known to all India and I need not discuss them. We broke the contract and for this year are on new short contracts with two other firms for 60,000 and 15,000 tons of different qualities. It is too early to comment on these, for the first cargoes have not yet been tried. It is not a fact that we are taking over surplus coal from other railways: we are getting our own coal. The present Chief Mining Engineer's Department has been conducting inspections practically from the time his Department was created: Mr. Church never handled a ton of Low's contract concerning which he made the preliminary arrangements.

My objection to the coal supplied through the Chief Mining Engineer is that it is not properly picked: there is far too much small and bad coal that should never have been allowed to leave the colliery, and that ought not to have got past the inspectors. The very first cargo of Low's contract was so bad and we complained with such vigour about it that an inspector was sent over to see it; and he had to admit that it was bad. It was not merely that it was broken. We want coal as large as possible provided that it is good coal but as matters are we regard with suspicion large lumps which have survived the severe handlings because the good coal gets well broken up. Much of the large size is not pure coal and is not fit to go into a locomotive firebox where it would cause serious trouble; consequently the side of the track is strewn with large lumps of this kind, thrown off by firemen, which are only fit for ballast and should have been rejected at the colliery. The inspector who came over adopted a *non-possumus* attitude; he said that he could not get the picking done properly at the collieries in the way that he wanted. If that is so, they ought to alter things there, for we were paying over Rs. 28 a ton in Rangoon; and we now pay about Rs. 22 under the new contract. The freight charges far exceed the cost of the coal itself. There is no sense in bringing stone to Burma as coal. As to the small coal and dust, a good deal of it is due to the extra handling involved by stacking

at the collieries and at Kidderpore docks and by getting it over ship's side here; but I do not believe that it is all due to these causes. The firms supplying through the Chief Mining Engineer have never kept inside the old figure of 15 per cent. of small coal—through a $\frac{3}{4}$ " bar screen with $\frac{1}{4}$ " spaces; and we have had cases of over 25 per cent. The softer the coal the more it breaks; Welsh coal breaks worse than Bengal coal. So far as friability is concerned South African coal comes between Welsh and Bengal. Bengal coals vary; for instance take Dishergarh and Damagurria. The latter you can knock about; it does not look like coal—our firemen had to be educated about it as they were inclined to regard it as bad coal on account of appearance and unusual weight. It steams well however. Dishergarh breaks up readily.

18. **Comparative merits.**—I have experience of coal from five or six South African collieries. But we have had only two cargoes within the last two years. These two cargoes were both Natal coals—Burnside-St. George, and Newcastle-Wallsend. Taking it all round I prefer Bengal. African coal catches fire easily. One of the two steamers carrying it is known to have had fire in holds when coming to Burma and the coal stacks twice took fire in Burma. The coal deteriorated when kept and later consumption figures and reports were unfavourable. I have never known Bengal coal fire in stacks on the Burma Railway during my 25 years' service. The price of the cargo of Natal coal in 1922 was Rs. 34-12 when Bengal was Rs. 28-4 per ton, but the cargo in 1923 was Rs. 24-6 against Rs. 28-8 Bengal on Low's contract—which was quite outside local rates at the time. The following shows comparative values of Welsh, Bengal and African Coals and refers to 1922*—

	Bengal.	Welsh.	South African.
Cost per ton f.o.r. Rangoon	Rs. 28-4-0	Rs. 35-0-0	Rs. 34-12-0
Consumption per 1,000 gross ton miles in lbs.	179*	No. I. 145 No. II. 162	165
Cost consumption per 1,000 gross ton miles in lbs.	Rs. 2-26	No. I. 2-27 No. II. 2-53	Rs. 2-56

* Average of sixty consignments.

(To Mr. Bell.)—Generally speaking, I am satisfied with Indian coal; I should never think of using any other coal if good Bengal coal is forthcoming. It takes a long time to get men into the habit of using a particular coal to the best advantage; change it and you get waste. Any other coal taken for the Burma Railways would be for the purpose of making up shortages of deliveries of Bengal coal. There can be no question of changing from Bengal to foreign coals. In seven trials of Bengal coals recently the best coal gave the highest consumption figure. If a coal makes steam too easily, the enginemmen neglect economy; for our purposes Bengal coal is undoubtedly the best. Our coal deliveries must be regular. We keep a four months' supply in hand to safeguard against interrupted deliveries. We take two or three cargoes of 6/8,000 tons every month of the year except January, February and March, which are the busy paddy traffic months, when we take only one cargo. British coal is not a competitor at all, nor is African so far as we are concerned. They cannot compete with Bengal coal for our purposes.

19. **Loading and shipping facilities.**—My remarks in my written evidence as to the falling off between wagon-load figures, surveyors' figures and Rangoon weighbridge figures will be clear if reference is made to the statement showing actual shortages (*vide* Annexure A). The result is that on

124,368 tons, shown by marine surveyors' figures, we lost 2,647, or an average of 2.13 per cent. I cannot account for this shortage though I have been trying to do so for 20 years. The 2 per cent. allowance commonly made by the trade nearly covers it; but we did not get the 2 per cent. allowance on Low's contract. There is no rebate on the Mining Engineer's figures, for we buy on the figures of the surveyors in Calcutta. To arrive at our own figures we run every wagon over the weighbridge; these figures are as checked by actual weighment.

(*To Mr. Legge.*)—Our weighbridge at the coal yard is not automatic; it is an Avery of ordinary steel yard type. I have had personal experience of only one automatic and it was very unreliable; this was over ten years ago; they have doubtless improved since. The machine referred to depended on a cylinder rolling up a band, but dust lay on the band and acted as a brake. This would not apply so much to a machine in constant use. We have one Avery's automatic now; it is only used for check-weighment of wagons, for which it is all right as for this the margin of error is not enough to matter. This machine is not complained of by the men responsible for its maintenance. The adequacy of automatics on the coalfields depends on the frequency of the inspections; if they are inspected only once every two or three months it is not enough. We test our coal-yard weighing machine with a special test wagon before starting each day's operations. The test wagon is the same weight as our commonest coal wagon loaded.

24 to 31. **Grading and certification.**—If we went back to calling for our own tenders I should not regard a certificate from the sellers as of much account. I should want the coal examined here in the presence of an agent from the colliery. The test that we adopted was this. Every morning 5 tons of coal as it came from the barges were put over a screen with $\frac{3}{8}$ " bars $\frac{1}{4}$ " spaced and picked over in the presence of the coal people's men and of our's. The figures thus obtained were taken as the average of the cargo; and if the 15 per cent. limit were exceeded, we could reject the lot. It was wonderful how then they kept down to the neighbourhood of the 15 per cent. when the coal supplied under present conditions is so dusty. The heavy penalties exacted kept the contractors up to the scratch. We had a man of our own on the fields watching our interests but any inspection by him did not relieve the contractors of responsibility as the coal was taken over in Rangoon.

As regards quality the test here did not suffice as it only dealt with size and freedom from bad coal; but our man on the coalfields followed the coal from the colliery to the docks. How exactly, I cannot say; he had some method of getting the numbers of the wagons at the colliery and tracing them at shipside. He had a watching brief for us chiefly to see that we got the coal specified. I agree that it certainly looks as if to have an inspector of our own on the colliery, in addition to our own test here, would be the only way of checking the quality. We are very dissatisfied with the Chief Mining Engineer's inspection. I am convinced that stringent inspection at the colliery and here in Rangoon are both essential. There is no redress once the stuff comes here under present conditions but under the former conditions we could reject the cargo. I never remember a case of actual rejection but we have compounded at considerable loss to contractors for defective cargoes. The precaution however anticipated trouble and we did get good cargoes as a rule.

The coal people are keen enough to get our contracts. Apart from coal Rangoon is a good port for shipping and coal firms are usually interested in shipping also. I think that it is best to leave the question of quality to competition. We have never got what we wanted since we gave up the tender system. As to sale by calorific value, what I say is that if we cannot get coal free from stone what is the use of thinking about sale by calorific. Calorific may be all right for power plants but is not suitable for a railway. Besides an analysis is an analysis of the coal sent to the analyst, but what about the sampling? You can make a coal look anything you like by judicious sampling.

We were supposed to be getting first class coal. In the old days we would look at nothing but No. 14 or 14A seam but since the new system we have had to take a lot of other seams and will have to do so in future. All the good coal is not in No. 14 and 14A seams but these are very regular seams whilst some of the others are very mixed. Coals differ greatly in quality, as we know from our trial of seven coals lately, which were from Messrs. Andrew Yule, Heilgers, Bird, Gillanders Arbuthnot, Turner Morrison, Jardine Skinner, and Turnbull. Grading coal is all right but there is no such thing as mixing coals to give a "blend." "Blended" coals come out in pockets of the various coals blended.

(To Mr. Bell.)—It is not about the quality of Bengal coal that we complain (we see to that when we select the collieries and seams) but about the dirt, stones, etc., left in the consignments. If a system of inspection is introduced, I should say have it at the docks and at the colliery. We suspect that any coal lying about at Kidderpore is swept up to fill steamers; and it is no use passing a coal at the colliery which is never going to come down to the steamer. Check at both places is essential. If we were satisfied that the check at both ends was sufficient it would be all right—but it's too big an "if" to be worth basing an opinion upon. What I have to show is a favourable consumption figure against gross tons of transport, so I exercise myself to get the actual weight of coal taken over. The system of check by ourselves had the great advantage that the colliery representative was on the spot to see that we were playing fair. We try every consignment on seven or eight mail engines and from the results we can tell if the coal is uniform in quality and of the proper quality. Our trials show that the coal we get varies widely even in the same cargo which is not extraordinary for a cargo is, as a rule, made up of coal from several collieries and not even always from the same seam. A driver may report well on one trip and adversely on another trip with the same consignment.

Any complaint that we now make here is after payment and it gives us no redress except that it should tend to keep the inspectors up to the mark. On our former system we paid only when we got the coal.

We have only bought direct from one Indian firm during the last 20 years—N. C. Sircar & Sons. They were small contracts for 17,000 tons in 1910 and 12,000 tons in 1915. It was comparatively low quality coal and used on shunting engines and unimportant trains.

We have rejected cargoes from almost all sellers—that is, we took them over eventually on reduced terms.

Landing facilities at Rangoon.—We have a foreshore, our own property, on which we unload, but most of the coal is loaded direct from barges into wagons. Our foreshore has nothing to do with the Port Commissioners. We had hoped that when the new scheme down the river came on we could bring ships alongside. Of course overside discharge here is quite good but it means an extra handling. We pay the Port Commissioners 7 or 8 annas a ton on stuff landed. I think, but my connection with the coal starts when it reaches the locomotive yards. It costs us now about Rs. 2 to land, in boating contractors' charges; so it costs a total of Rs. 2-8 to land. This Rs. 2-8 is included in the "about Rs. 22" that I have quoted as the price for our coal. It would be made up as follows:—

15,000 tons at Rs. 11-10 f.o.b. Calcutta (without less 2 per cent. B/L)

60,000 tons at Rs. 12-8 f.o.b. Calcutta (less 2 per cent. B/L)

Sea freight Rs. 6-4 at present

Rangoon charges Rs. 2-8 as explained above

and then there would be insurance, annas 3 and 6 pies on the Low contract. The new contracts are without insurance and one has the 2 per cent. allowance on the bill of lading figures and the other has no such allowance.

(To Mr. Bray.)—Our experience as to wastage and storage since September is much better; they don't come even to 2 per cent.; the 2 per cent. on these would then afford a certain amount of profit.

ANNEXURE A.

Name of vessels.	Date of completion.	Surveyor's figures.	Burma Railway weighbridge figures.	Per cent Loss comparing column 4 with 3.	Actual figures given by Mining Engineer.	Receipt figures.
1	2	3	4	5	6	7
		Tons.	Tons C. Qr.		Ton. C.	Ton.
Haresfield . .	10th Sept. 1923	7,856	7,674 11 3	2.31	7,917 0	7,735
Binfield . .	19th Sept. 1923	7,351	7,180 2 3	2.32	7,474 13	..
Homefield . .	1st Oct. 1923	7,641	7,438 12 1	2.64	7,697 8	7,694
Allpore . .	9th Oct. 1923	7,015	6,873 11 2	2.01	7,080 4	7,116
Nirpura . .	16th Oct. 1923	9,254	8,995 19 0	2.78	9,400 6	9,576
Surada . .	24th Oct. 1923	7,332	7,220 3 3	1.52	7,420 2	7,486
Winkfield . .	14th Nov. 1923	7,821	7,604 10 2	2.00	7,928 2	8,100
Binfield . .	23rd Nov. 1923	7,501	7,432 19 2	2.08	7,737 11	7,772
Goleonda . .	21st Dec. 1923	7,624	7,820 14 3	1.13	8,214 0	8,335
Homefield . .	29th Dec. 1923	7,882	7,727 8 0	1.96	8,061 16	8,070
Haresfield . .	5th Jan. 1924	7,933	7,834 1 3	1.24	8,200 17	8,220
Sirsa . .	2nd Feb. 1924	7,505	7,385 8 2	1.56	7,760 14	7,750
Tanfield . .	10th Feb. 1924	6,972	6,571 10 2	5.74	6,877 0	7,604
Chakrata . .	24th Feb. 1924	8,492	8,331 17 3	1.88	8,702 0	..
Homefield . .	26th Feb. 1924	7,910½	7,711 10 3	2.62	8,952 10	8,155
Haresfield . .	5th March 1924	7,880	7,846 9 1	.42	8,180 5	8,067
TOTAL		124,368½	121,718 18 1		126,764 8	

NOTE.—(3) Surveyor, Calcutta Port, on which quantities payments made.

(4) Actual figures delivered at Rangoon weighbridge.

(5) Figures given by Mining Engineer on complaints made regarding differences between (4) and (3).

(7) Figure shown on Mining Engineer's shipment report. What it exactly means is unknown.

ANNEXURE B.

Excerpts from official letters from the Locomotive Superintendent, Burma Railways, to the Agent, Burma Railways.

(1) Letter No. 3630/S. & M. 234 of 17th August 1922.

Coal Supply.

* * * * *

4. **Welsh Coal.**—We have had two consignments during 1922, i.e.,

No. 1.—5,408 tons, specified to be 3,612 tons of "Powell Duffryn steam coal from the Admiralty pits" and 1,796 tons "certified as coal of the best description, known by the denomination of Rhymney valley small steam coal, fresh wrought at the time of shipment, by the Powell Duffryn Steam Coal Ltd."

No. 2.—6,593 tons, specified as "½rds Dowlais Merthyr Screened and ¼rd Dowlais Cardiff small."

ii. Both consignments were excessively dusty; 63 per cent. on a trial went through a screen with $\frac{3}{4}$ " bars spaced $\frac{1}{4}$ ". No. 2 was decidedly worse than No. 1 but even No. 1 gave not less than 50 per cent. screenings. The very dusty coal had to be drenched with water before it could be shovelled into the firebox.

* * * * *

iv. No. 1 consignment averaged 145 lbs. per 1,000 gross ton miles and in spite of its excess in dust proved excellent steaming coal, and was exceedingly popular with the drivers who had seen nothing quite so good before. Even these figures are higher than were obtained with the really good Bengal coal got long ago. More experience with the coal would probably have produced still better figures.

v. No. 2 consignment averaged 162 lbs. per 1,000 gross ton miles and was a disappointing lot. We really got a reverse of the 3rds large and 3rd small specification, and if we had gone in for more of this coal it would have been necessary to have had some competent person watching our interests at the port of shipment. It is not economical to transport "smalls" 8,000 miles.

5. **South African Coal.**—One consignment only has been tried, namely, 6,919 tons delivered in June 1922. The coal was specified to be "a full cargo of South African Burnside and St. George coal." In 1908 we got good reports concerning St. George coal both from the Ceylon and Bombay, Baroda and Central India Railways, but we have no data concerning the Burnside colliery.

This consignment proved to be an excellent steaming coal and gave less trouble on the main line than any coal we have had as regards clinking on the firebars. The result of the trials shows an average of 165 lbs. per 1,000 gross ton miles.

6. Comparative prices per ton on rail Rangoon are:—

	Bengal.	Welsh.	South African.
Cost per ton f.o.r. Rangoon	Rs. 28-4-0	Rs. 35-0-0	Rs. 34-12-0
Comparative consumption per 1,000 gross ton miles in lb.	179*	No. 1. 145 No. 2. 162	165

Cost of working:

Bengal . . .	179 lbs. at Rs. 28-4-0 per ton	=	Rs. 2-26	per 1,000 gross ton miles.
Wales No. 1 . .	145 lbs. at Rs. 35-0-0	„	=	Rs. 2-27
No. 2 . . .	162 lbs. at Rs. 35-0-0	„	=	Rs. 2-53
South African .	165 lbs. at Rs. 34-12-0	„	=	Rs. 2-56

From this it will be seen that Welsh No. 1 at Rs. 35 is almost equivalent in value to Bengal at Rs. 28-4-0 whereas Welsh No. 2 and South African are more expensive.

* * * * *

8. If the Mining Engineer's inspectors do their work properly and eliminate the shale, stone, roof and floor coals and keep down the slack to a reasonable figure foreign coal cannot compete with good Bengal in any way. High grade coal is liable to burn quicker with greater waste. If we had been going in for more foreign coal it would doubtless have been possible to get better figures by modification of grates and front ends.

(2) Letter No. 486/S. & M. 8, dated 6th February 1924.

Bengal Coal: Messrs. Low & Co.'s Contract.

* * * * *

2. It is interesting to note the trial result of the 6,000 tons Natal coal purchased in reference to correspondence ending with your 14891/23/7 of 13th December 1923. This coal cost Rs. 24-6 per ton as against Rs. 28-8 for Low's coal. Some trouble was experienced with it in steaming at the start possibly due to the change in class of coal. Trials run in January 1924 on 3 engines in an exactly similar manner to the trials given Messrs. Low & Co.'s coal gave the following result:—

Average per cent. shale and roof coal . . . 3-34 per cent.

Average per cent. screenings . . . 24-4 per cent.

Average consumption per train mile . . . 44-3 lbs.

Average consumption per 1,000 gross ton mile 150-88 lbs.

The percentage of screenings is very high indeed and there appears also to be a high percentage of sulphur in the coal. It steams well, requires careful firing and forms clinker. It gives about 8½ per cent. better consumption per 1,000 gross ton miles than the last 8 consignments, the best, of Low & Co.'s coal.

* * * * *

Extracts from Mr. Craig's letter, dated 28th November 1924.

I may add that the Natal coal referred to in letter immediately above twice took fire in stacks in the dry zone at Toungoo and appeared to weather badly. There was a strong smell of sulphur from the stacks. The coal which was kept for some time in the stacks appeared to have deteriorated badly and later results were unfavourable even compared with Bengal coal. It also transpired that this coal took fire on its way from Durban to Rangoon. This was Newcastle-Wallsend Natal coal.

In 1923 a Rangoon firm gave us a wagon load of coal from the Vrede and Waterval Collieries, Natal. It was a very dirty lot; 36 per cent. of it went through a ½" screen. It steamed well, better than Bengal coal, but the consumption figure was 54 lbs. compared to 51 lbs. Bengal per train mile. No price was quoted.

I also append a list of the coal Contracts from 1905.

BURMA RAILWAYS.

Statement showing the coal contracts from 1905-06 to 1923-24.

(1) Up to 1st August 1917.

Year.	Contractor.	Quantity in tons.	Rate per ton c. i. f. Rangoon including port dues : actual weighbridge weights or 2 per cent. less bill of lading.
			Rs. A. P.
1905-1906	Messrs. Jardine Skinner & Co., Calcutta	85,000	9 0 0
		5,000	9 8 0
	Messrs. Balmer Lawrie & Co., Calcutta .	20,000	9 4 0

Year.	Contractor.	Quantity in tons.	Rate per ton c. i. f. Rangoon, including port dues : actual weighbridge weights or 2 per cent. less bill of lading.
			Rs. A. P.
1906-1907	Messrs. Jardine Skinner & Co., Calcutta	115,000	9 8 0
	Messrs. Jardine Skinner & Co., Calcutta	5,000	9 12 0
1907	Messrs. Jardine Skinner & Co., Calcutta	104,000	10 14 0
1908	Messrs. Shaw Wallace & Co., Calcutta .	12,000	12 3 0
	Messrs. Jardine Skinner & Co., Calcutta	93,000	12 2 0
1909	Messrs. Jardine Skinner & Co., Calcutta	88,000	12 2 0
	Messrs. Jardine Skinner & Co., Calcutta	{ 7,000 5,000 }	12 12 0
1910	Messrs. N. C. Sircar & Sons, Calcutta .	17,000	9 4 0
	Messrs. F. W. Heilgers & Co., Calcutta .	103,000	9 6 0
1911	Messrs. Jardine Skinner & Co., Calcutta	83,000	8 12 6
	Messrs. F. W. Heilgers & Co., Calcutta .	37,000	9 6 6
	Messrs. Bird & Co., Calcutta . .	5,000	8 12 0
1912	Messrs. F. W. Heilgers & Co., Calcutta .	134,000	9 4 0
	Messrs. Martin & Co., Calcutta . .	6,000	9 4 0
1913	Messrs. Bird & Co., Calcutta . .	150,000	12 0 0
1914	Messrs. Jardine Skinner & Co., Calcutta	130,000	12 5 0
1915	Messrs. N. C. Sircar & Sons, Calcutta .	12,000	10 4 0
	Messrs. F. W. Heilgers & Co., Calcutta .	60,000	12 0 0
	Messrs. Balmer Lawrie & Co., Calcutta .	68,000	11 2 6
1916	Messrs. Jardine Skinner & Co., Calcutta	70,000	14 0 0
	Messrs. Bird & Co., Calcutta . .	{ 50,000 20,000 }	14 0 0 18 0 0
			18 4 3
1917	Messrs. Andrew Yule & Co., Calcutta .	70,000	{ From 1st April 1917 18 8 3

(2) From 1st August 1917.

Year.	Contractor.	Quantity in tons.	Rate per ton loaded into wagons at Rangoon including Rs. 2 handling charges and annas 8 as Port dues, on Calcutta Surveyor's weights.
			Rs. A. P.
1918	Mining Engineer, Calcutta (Admiralty Coal). From 1st August 1917.	91,418	33 8 0
1919	Mining Engineer, Calcutta (Admiralty Coal). From 1st April 1918.	92,872	26 8 0
1920-1921	Mining Engineer, Calcutta (Admiralty Coal).	177,910	26 8 0
1921-1922	Mining Engineer, Calcutta (Admiralty Coal).	180,000	28 4 0
	Local purchase (Welsh Coal) . . .	12,000	35 0 0
1922-1923	Mining Engineer, Calcutta . . .	180,000	28 8 0
	Local purchase (South African coal) . .	7,000	34 12 0
1923-1924	Mining Engineer, Calcutta . . .	180,000	28 8 0
	Local purchase (Natal Coal) . . .	6,000	24 6 0

A. E. FORSTER, Esq., of Messrs. Gillanders Arbuthnot & Co.*(Oral evidence—25th November 1924, Rangoon.)*

General.—I cannot claim any technical knowledge of coal; I speak purely as an importer. The amount of coal that we handle in the year varies considerably; it depends on the contracts we get. On an average it is about 20,000 tons in the year. Practically speaking, it is all Bengal coal. We have had South African coal—about 20,000 tons of it in the last two years.

E. Comparative merits and prices of Indian and other coals.

As to comparing them for quality and price, I should say that generally speaking the quality of South African coal is approved; it is very regular, and we can be sure of getting what we have bought. We get our South African coal not from Natal but from Delagoa Bay, i.e., it is Transvaal, Witbank coal: that is a first class coal. The collieries from which we get our Bengal coal are various. The quality of the coal that we are getting from Bengal now is better than it used to be, because our Calcutta House is more interested in coal than before. We can now rely on our Bengal coal supply, and we can be sure of getting it up to sample.

There are several reasons why we prefer to handle Bengal coal; one is that we can get it across as we want it, whereas, on the other hand, we cannot be certain of freight from Delagoa Bay.

There are ships running regularly between Rangoon and South Africa, belonging to Messrs. Andrew Weir and Bullard King. These boats carry general cargo. They come down to Rangoon with gunnies from Calcutta and load timber and rice here for South Africa and sometimes they bring back coal. Besides that there are vessels chartered from South Africa sometimes. I know of many cargoes coming in that way. But we are more likely to get facilities and better freight from the regular lines. We have never had certificates for South African coal imported by us. The South African grading system was not in force when we bought our South African coal; none the less the quality was very regular and it compared in price favourably with Indian coal.

I have no information about the recent prices of African coal. First class Bengal coal can be purchased at about Rs. 19 c.i.f. I cannot say how this c.i.f. rate is reached. It is quoted to us as covering all charges up to Rangoon.

The charges to be paid here are boat-hire, landing charges, Port Commissioners' foreshore charges and depôt charges. We hire part of the Port Commissioners' depôt.

(To Mr. Legge).—It is correct that formerly Bengal coal was less up to sample than South African coal. I should say that there was some dissatisfaction with it. In our experience the quality has improved; it is more reliable than it used to be. As far as we are concerned the improvement is due to better arrangements made by our Calcutta House recently. There is less dust perhaps in South African coal but I have not screened it to find out the actual percentage. Freight facilities from Calcutta are better than freight facilities from South Africa. You can almost always get freight from Calcutta at very short notice. I should not say that the import of coal into Rangoon is influenced at all by agencies; it might be suggested that a firm who are agents for South African coal might push that coal in preference to Indian coal, but I do not think this has any bearing on the subject really.

We chiefly supply for bunkering and industrial purposes. Rangoon is a small bunkering port, apart from the British India Steam Navigation who make their own arrangements. There might be an improvement if we could get cheaper coal, for a good many of the steamers which now prefer to bunker at Singapore with South African and Japanese coal might bunker here if coal were cheaper. The steamers to which I refer are Japanese and Chinese owned, which come up to Rangoon but do not bunker here, because, they say, the South African or Japanese coal in Singapore is cheaper. Of course many steamers have to bunker here, because this is practically their headquarters, e.g., steamers on certain British India runs and some of the Asiatic steamers. The Asiatic steamers call for tenders for their coal each year.

Grading and certification.—In the ordinary way we do not ask for the certificates which private firms can get, if they like, from the Chief Mining Engineer as to the quality of the coal shipped by them.

(To Mr. Legge).—I have really no views on the subject of selling Bengal coal on certificate. But if we are asked to supply the Admiralty standard, for instance, and if a certificate is wanted, we can get the Chief Mining Engineer's certificate.

S. E. GOLDING, Esq., of Messrs. Steel Brothers & Co.

(Oral evidence—26th November 1924, Rangoon.)

General.—I am in charge of the Coal Branch of our firm. They handle from 35,000 to 50,000 tons of coal as import agents for the Bengal Coal Company, but they are interested also as using it in their refineries.

Port facilities.—All coal coming into Rangoon is handled by manual labour. My firm has its own shore depôt (its own property, not rented from the Port Commissioners), and pays to the Port Commissioners only the harbour dues of seven annas. I have had a good deal of experience handling our own imports and Burma Railways contracts besides, but I have never had a hang up: and the labour charges here are not on the whole expensive. There is no need for any mechanical appliances in this port; no one firm handles enough to justify them; if they were put in they would not benefit Indian coal any more than other coals; and anyhow steamers discharge in stream and we have to work through boats.

18. Comparative merits.—As far as the burning value of the coals goes, I understand that South African coal, and in especial Witbank, is better than ordinary Bengal Navigation coal. We bought two cargoes of it and used them in our refinery; that was our only test. But we did not attempt to substitute it generally for Bengal coal; we had sufficient stocks without it, and Witbank was not quite cheap enough.

During the last three weeks Witbank Large was offered at Rs. 17-4 c.i.f., including duty—a firm offer. To-day I have been wired from London an offer of 24s. c.i.f. inclusive of duty (or Rs. 16-8 at 1s. 6d.), against Rs. 18-8 for Indian coal, as I estimate it. First class Navigation Durban is quoted at Rs. 18-8 c.i.f., inclusive of duty, and Welsh first class Admiralty at Rs. 23-11. Witbank at Rs. 17-4 is better than the Indian coal at Rs. 18-8. I cannot suggest any means of getting the Indian price down: that is for the Calcutta firms to tackle.

As to the danger of Indian coal being supplanted by South African, it must be remembered that there is no large coal market here; there are only three big consumers—the railways, the Irrawaddy Flotilla Company and bunkering. Bunkering (if we exclude the British India who make their own arrangements) is chiefly for rice charters and the Asiatic steamers. It is only owing to the special preference of these three for Indian coal, due to reasons other than price, that Indian coal has held its own.

As to quality, I have had no complaints about the Indian coal that we are now getting; it is well up to the purposes for which it is required. I didn't handle the South African coal that we got, and so I cannot say if it was less smashed than is Indian. And I have not noticed that our Indian coal was particularly smashed though cargoes vary, and some show worse results than others in this respect. Purchasers, needless to say, would prefer more big coal and less slack. We do not need a guarantee of quality; the people who might need it would be the firms who purchase from us, but they have never asked for it.

(*To Mr. Bell.*)—The comparison between Witbank and our Navigation coal was on side by side tests. What seams are meant by Navigation coal I cannot say; we are supplied with two varieties by Messrs. Andrew Yule's,—Dishergarh and Bengal Coal Company's Navigation.

I should say that there was a difference of Rs. 2 per ton in favour of Dishergarh. I could not, so far as my experience goes, say that Witbank is better than Dishergarh. In saying that it is better than Indian coal, I am speaking of inferior Indian coals.

(*To Mr. Bell.*)—I have never known South African coal to come into Rangoon in large quantities. Before Indian coal is supplanted you would have to have a regular supply of African coal; and I would rather depend on a steady supply of Indian than a spasmodic supply of cheaper South African coal. Unless South African coal can get a steady supply of cheap tonnage, there is, I agree, no danger of its supplanting Indian coal. Rangoon does not do a large bunker business; it was curtailed recently by losing the Henderson and Bibby lines. The Bibby has gone on to oil, and the Henderson line makes its own arrangements. There is no steady bunkering here; such bunkers as we used to get seem to prefer Colombo now, and Chinese or semi-Chinese owned steamers prefer bunkering at the other end

or at Singapore. Excluding deep-sea steamers, I should not call our bunkering business large.

(To Mr. Bray.)—South African coal has dropped from 29s. 6d. to 24s. in the last 18 months; it is not only that exchange helps it but the exporters show a disposition to meet every fall in the market price. I agree that deducting freight from 24s. there cannot be much left for the coal; it may have come out, though, practically as ballast, or the mines may be sacrificing something to clear stocks.

(To Mr. Legge.)—I am not in a position to express an opinion about freight from South Africa. There is a good chance of supplies being steady during the first six months of the year when ships can carry coal one way and get a rice charter the other; during the rest of the year freight from South Africa would be erratic.

(To Mr. Bell.)—I think that there have been some full cargoes of British coal, but it is mostly excess bunkers. It is not likely that a ship would be tempted to come out from England with coal at 15s. the ton merely to pick up rice at 35s. Looking at it from the point of view of inducements to shipping and considering that canal dues would have to be paid both ways, I should say that there is no chance of British competition with Indian coals here. I do not expect any keen competition from British coals, but the only thing is how far this South African business is going to go; we thought some time ago that South Africa had put prices down as far as they could go but they are still dropping.

The quotations are for a ton of 2,240 lbs.

G. H. HOSIE, Esq., of Messrs. H. V. LOW & Co.

(Oral Examination—27th November 1924, Rangoon.)

General.—I have been in the firm here since 1910, and have been head of it since July last, before which time I was second.

In 1921-1922 we imported 61,228 tons in addition to the amount for the Burma Railways. During last official year we imported 31,852 tons. We are not supplying the Burma Railways now; we ceased to do so some months ago. We supply coal from the collieries with which our Calcutta firm makes arrangements.

18. Comparative merits.—Generally speaking importers here are not getting such good Indian coal as they ought to. But the consumers here are not very particular and are contented if the coal only burns freely. The same remark applies to South African coal. In one test made at the Municipal pumping station South African coal was found to be worse than Indian. Rangoon is not getting the best of either class. For Welsh coal there is absolutely no market at present; there are 500 tons lying unsold in Rangoon: no price has been quoted but the owners have asked for offers. The last sale of Welsh was in the neighbourhood of Rs. 41 t.i.b. The corresponding price for Indian coal was Rs. 34; that was some time ago; now Indian coal would be about Rs. 27 t.i.b. The price of the South African coal was in December 1923 from Re. 1 to Rs. 2 higher than first class Indian coal so called here, i.e., than the best average Indian coal imported: I do not know its current price.

(To Mr. Bell.)—The class of South African coal usually imported into Rangoon by merchants for the trade is not superior to the export quality Indian coal that reaches this port; the higher charge is for the name. But South African coal is practically not known in Burma. One firm only imports, so far as I know, and that is for their own line of steamers; it pays them because they bring it up practically as ballast. The British India do this and so do the Asiatic for which Gillanders are Agents. I think that Gillanders have a contract with the Asiatic to supply African coal; formerly they always used Indian coal and we used to supply it.

Facilities at Rangoon.—My t.i.b. figure is based on the figures for the old coal depôts. The new depôts on Pazaundaung Creek to which we have been driven by the Port Commissioners offer no facilities for efficient or economical handling of coal as regards operations from the river side, i.e., landing for storage or loading into boats and launches for bunkering. They are far out and with the increased distance come increased costs. The Port Commissioners have not reduced their charges from 5 annas in spite of this, though these used to be only 3 annas. If any firm were dealing with three cargoes at a time as we used to, there would be congestion and demurrage would have to be paid wholesale.

(*To Mr. Bell.*)—Ships would bunker at Calcutta in preference to Rangoon but not elsewhere. For instance the Hansa boats go back to Calcutta to bunker as they find it cheaper. But other ports are more expensive than Rangoon though I do not know about Madras ports. Singapore rates are much higher. There is a demand for cheaper coal here; that is, if it were cheaper it would be more widely used. A lot of industrial concerns at present cannot afford to buy it. The Rangoon Electric Tramways even use paddy husk; the Railways and the Irrawaddy Flotilla Company use a lot of wood fuel; and small engineering firms use wood or paddy husk. Of course they get paddy husk for next to nothing, at any rate during the milling season. Now the price is high; a sampan load costs Rs. 10 against Rs. 2 for the cheap season. Husk is not briquetted now; the industry started but went out. Then paddy husk bulks tremendously and accommodation for it is an appreciable item; and another objection to it is its liability to fire which runs up insurance rates.

Coal is always bought at 40 cubic feet but my experience shows it should be less. I put it at an average of 37 or 38 cubic feet for Rangoon: this may not be true in India, but the additional handling between Calcutta and Rangoon increases the percentage of coal which thus packs better here. We always lose on sale by measurement; the Public Works Department buy on measurement and whenever there is a dispute about weights any buyer will turn to cubic feet. And bunkering ships, especially foreign ships, always insist on 40 if not 42 cubic feet.

(*To Mr. Bell.*)—We do not check by draft when bunkering in Rangoon. For small quantities my experience shows that survey figures are not worth much. The widest variation that I have known was on one of my firm's consignments which turned out about 7 per cent. short, but it would not be justifiable to assume that such a wide variation is frequent. I should put the shortage between survey weight and landed weight at under 4 per cent.: short outturns are more frequent than excess outturns, but the difference varies. There is one particular Asiatic steamer for which survey certificates are always wrong. I have absolutely no experience of tramp steamers.

(*To Mr. Legge.*)—Surveyors take 40 cubic feet.

Grading of Indian coal.—I am not in favour of grading as it is more than probable that buyers may come to appreciate a certain grade of coal which may not always be available and the anomalies arising out of such a situation are liable to affect adversely both collieries and coal merchants alike.

A. McKEAND, Esq., J. & F. Graham & Co.

(*Oral evidence—25th November 1924, Rangoon.*)

General.—As regards the connection of my firm with coal in Rangoon, we do nothing in Bengal coal; but we are Agents of the Indian-African line and import a little South African coal. We do not import it on our own account, as a matter of fact; we place orders as Agents. We do not consume it ourselves, and we do not stock it ourselves. We merely sell it c.i.f., and the people who buy it take delivery of it from the ships.

E. Comparative merits and prices of Indian and other coals.

As regards the import of 40,000 tons of South African coal last year, to which the president refers, it was not done by us. Anyone who can place the business does it, and it is usually worked through London. How much coal we imported last year I could not say exactly, but it would be something under 10,000 tons, besides coke. I do not think that the figures of the Director-General of Commercial Intelligence showing that there have been no imports of South African coal at all for the first 6 months of this year can be correct. As far as we are concerned the imports from South Africa were better this year than last year, and when I gave my figure for our imports, I was thinking more of this year than of last year. I imagine that your figures for imports do not include imports of coke; they might make a difference.

20. Prices.—I cannot speak about the comparative merits of South African and Indian coal, since we are not ourselves consumers. As to prices I do not know those of Indian coal because I am not interested. The price of South African coal depends on exchange, we merely sell it on c.i.f. terms. It is not fair to the buyers to give away my prices. They depend on several things—quality, freight and exchange; and exchange varies every day. There is no doubt that South African coal, because of exchange, is at present comparatively cheap; but with exchange at 1s. 4d. it would not be so attractive. I am surprised that consumers are not realising how cheap it now is and are not buying more of it than they do. I do not think prices are published anywhere here. We do not sell retail; we merely sell cargoes occasionally c.i.f., and it largely depends on the rate of exchange what the rupee price is going to be. The freight from South Africa varies according to whether the people can get other cargo for their ships or not. Our port is Durban. I cannot remember what was the lowest freight paid by us this year. On one occasion it was 12s. 6d. a ton, and that would, I think, be an average figure; I noticed that rate in the Charter Party of one particular voyage. I do not know that our price is a secret exactly; it is about 30 shillings a ton c.i.f., equivalent to Rs. 20 at 1s. 6d.; sometimes a little less.

South African coal, just like Bengal coal, is known by the seam. I do not know about certificates. They can be submitted, but the South African coals that we sell are bought on the name. I do not think any actual certificates are given with them. I think the consumers here are far too conservative in sticking to Indian coal so much. South African coal is cheaper and, I understand, better. I do not think you can get the best Bengal coal for Rs. 19 c.i.f. Of course, the price depends on freight. Taking the best quality of South African against the best quality of Bengal coal, I think the former would be cheaper with a one and six penny exchange. There seems to be something wrong if people can land coal all the way from South Africa as cheaply as from Bengal.

(*To Mr. Legge.*)—We have had no complaints about South African coal not being up to specification. Our South African coal has always been up to specification. We have only been doing South African business for about 18 months. We were previously agents for Heilgers before they opened out here 3 or 4 years ago.

R. SINCLAIR, Esq., Manager of the Irrawaddy Flotilla Co.

WRITTEN STATEMENT.

The pre-war cost of 1st Class Bengal coal supplied to the Irrawaddy Flotilla Company, Ltd., was Rs. 9-4 per ton c.i.f. (of which Rs. 3 represented the steamer freight Calcutta - Rangoon) and the annual consumption was round about seventy or eighty thousand tons.

Prices and freights fluctuated very slightly until 1917 when freight rose suddenly from Rs. 3-4 per ton to Rs. 12 per ton, the cost of coal f.o.b. Calcutta being then Rs. 7-10 per ton.

In 1919 the f.o.b. price of coal was Rs. 12 per ton and freight Rs. 10 per ton. In 1920 freight was increased to Rs. 12-8 per ton, the cost of coal still remaining at Rs. 12.

From the beginning of 1922 until the end of 1923 the f.o.b. price of coal varied from Rs. 16-12-3 per ton to Rs. 17-0-4½ per ton; but freight, which at the beginning of 1922 stood at Rs. 11 per ton, dropped in April 1922 to Rs. 7-8 per ton and later on to Rs. 6-12 per ton.

In 1917 when freight was so high and the prospects of getting delivery of any coal at all were problematical, we cut our coal consumption down to the lowest possible limits and went in very extensively for the use of firewood: and our organisation in this connection became very complete although we had every intention of again reverting to the full use of coal when the war was over. The exceedingly high freights, however, which ruled for the four years following the armistice were prohibitory and we continued to restrict the use of coal as far as possible. When freights eventually fell the f.o.b. price of coal rose correspondingly and so we decided to continue on the lines on which we had been going until a reasonable level of c.i.f. prices was again reached.

The price at present is, I understand, about Rs. 20 c.i.f., and while this reduction is appreciated a further reduction will require to come about before it will pay us to revert from firewood back to the full use of coal again. At present our consumption is less than half the pre-war consumption although our fleet has increased in numbers.

(Oral evidence—November 26th, 1924, Rangoon.)

General.—My firm is one of the biggest users of coal in Burma; only the railways are bigger. We are using this year about 36,000 tons, but before the war we did double that. The reasons for the change are given in my written statement. I should put the price at which it would pay to revert to the extensive use of coal instead of firewood at Rs. 15 c.i.f. Our consumption of coal is now at its minimum. We can get all the wood that we want anywhere on the river bank which is a great convenience: but we cannot see ourselves using less coal. Any reduction in price would tend to increase coal consumption; for each reduction would enable us to send out coal so much further out to stations along the river which now use firewood. There is no tendency for the price of firewood to go up. Supplies are practically unlimited. The areas nearer the rivers are worked out quicker than those further back, but there is such a supply and we go to such a vast number of stations that we can draw on practically the whole of Burma—wherever a river and a creek touch.

(To Mr. Bell.)—We notice no particular wear and tear of furnaces from using wood, and we employ exactly the same staff for firing, whether we use wood or coal.

(To Mr. Bell.)—As steamer freight was Rs. 3, the f.o.b. price must have been Rs. 6-4 when the c.i.f. price was Rs. 9-4. What it is now I do not know. We have only had 10,000 tons down this last year, and I have only asked about c.i.f. prices, not about f.o.b. I should calculate it at Rs. 13-12.

(To Mr. Bray.)—We do not expect ever to see coal at Rs. 9-4 again. A price of Rs. 15 c.i.f. would, I agree, mean Rs. 5 for freight, Rs. 5 for incidental charges, and Rs. 5 for the actual coal; I would correct my figure and say Rs. 15-8, that would enable us to bunker at Rs. 20. In this last year we have actually bought only 10,000 tons; that was through Messrs. Steel Brothers and the Bengal Coal Company. Before the war and afterwards too we got all our coal from Messrs. Jardine Skinner. We have never bought from any save European firms.

10. **Comparative merits.**—We have had experience of South African coal and tested it in our dockyard. We found that taking best Bengal coal as our criterion at 100 points, an African coal, Durban Steam Navigation, worked out at 95·1 points. The Indian coal tested was not the coal that we use; it would be Dishergarh, I think, probably a sample; I do not think that our company ever bought coal as good as that. The coal that we actually bought we considered to be anything from 2 to 5 points worse than Durban Steam Navigation. What the test was I am not aware; it was made by our Dockyard Superintendent under a boiler; it was an actual steaming test. We got some Witbank as well as Durban Steam Navigation. It was distinctly inferior to Durban and a little worse than first class Indian. Two cargoes of South African coal were all that we had—about the end of last year. The result was that they showed a slight superiority of 2 to 5 points over the Indian coals that we were getting. The price was slightly higher; how much, I cannot exactly remember. It worked out very much the same as Bengal. We did not go on using it: there was always the chance of a duty being imposed on it and there was so little in it that it was not worth while. Just now we could land this coal, including duty, at Rs. 19·7; the freight I do not know, as we buy c.i.f.; it is a local quotation. At present there is so little in it as regards price that we prefer to stick to our certain market, and as to quality we have no complaints.

24 and 28. **Grading of coal and certification.**—We do not think any system of certification for quality to be necessary. When we go to a good firm in Calcutta we consider that we shall get good coal. We have never been let down. It is to their interest as well as ours to see that we get the quality that they have sold us. We have had minor complaints, *e.g.*, about the quality of a portion of a steamer's cargo but nothing to speak about. If any firm did let us down we should never go back to that firm.



Part II.—Evidence obtained outside India.

(a) ADEN.

The following information was obtained by the Committee as regards Aden.

The firms interested in coal at Aden are the P. & O. S. N. Company, the B. I. S. N. Company, Messrs. Luke Thomas & Co., Ltd., the Aden Coal Co., and the Messageries Maritimes & Company. The local agents make the bunkering arrangements for ships calling at Aden, under the control of their head offices.

Imports into Aden (in tons).

Year.	From United Kingdom.	From Calcutta.	From South Africa.	From Japan.	TOTAL.
1912-13	115,356	10,194	2,500	6,700	134,750
1913-14	115,143	5,284	5,367		125,794
1914-15	98,731	16,377	25,938	..	141,046
1915-16	82,671	12,958	29,880	..	125,509
1916-17	29,988	15,852	43,662	..	89,502
1917-18 . . . .	..	5,758	41,861	..	47,619
1918-19 . . . .	..	..	76,595	..	76,595
1919-20	50,904	15,966	85,876	..	152,746
1920-21	29,167	36,854	87,333	..	153,354
1921-22	53,882	..	29,403	..	83,285
1922-23	76,215	..	22,634	..	98,849
1923-24	59,117	..	51,020	..	110,137

Liquid Fuel and Coal.

Year.	Imports of liquid fuel.	Number of ships taking oil.	Number of ships taking coal.	Number of ships taking oil or coal.	Percentage of vessels carrying.
	Tons.				Coal. Oil.
1920-21	42,196	90	365	1,119	33 8
1921-22	35,741	112	246	999	25 11
1922-23	69,231	164	267	1,122	24 15
1923-24	155,926	288	349	1,220	29 24

Handling of coal.—The coal is discharged from the colliers by means of iron tubs into lighters which take it for stacking to the Bunders. It is put into gunny bags for discharge from the lighter and it is again bagged before being again loaded into lighters for bunkering, and it is put into the bunkers bag by bag. All the work is done by hand. There are no mechanical appliances for unloading or loading and no schemes for improving facilities by introducing mechanical appliances are in contemplation.

Prices.—Best large Welsh was selling at £2-15-3, ordinary Welsh coal at £2-9-6 and Transvaal at £2-0-6 in January 1925 delivered into bunkers.

Costs.—The Port Trust levy a toll of 2 annas *plus* 70 per cent. surcharge on all coal imported for the use of importers and 4 annas *plus* the 70 per cent. surcharge on coal imported for sale. The cost of landing and stacking is put at Re. 1-12 per ton, which covers the hire of lighters alongside the collier with five coolies, their towage from shore to steamer and back, and the cost of discharging from the lighters onto the wharf carrying the coal to the stacking place and stacking it. The cost of bunkering may be taken at the same figure, but it varies if night work is done and according to the number of stages on the ship's side. The coal wharves are all in private hands, the P. & O. S. N. Company being able to stack 20,000 tons. The average amount stacked totals 60,000 tons.

Indian coal in Aden.—The cessation of imports from India into Aden is attributed not only to the embargo imposed on exports but to the low quality and high price of Indian coal. Importers found that they could substitute other coals, being able to get cheaper freight from the United Kingdom and more favourable prices, but the opinion is expressed that Indian coal might regain an entry into Aden provided that it is found to be of better quality and of a price low enough to match with other than Indian coal. It is considered to be from 25 to 30 per cent. inferior to ordinary Welsh, the corresponding figure for Natal coal being about 20 per cent.

(b) COLOMBO.

A. C. CAMPBELL, Esq., of Messrs. Mackinnon, Mackenzie & Co., Colombo.

(Oral evidence—December 16th, 1924.)

I am Deputy Superintendent to the British Indian Steam Navigation Company, and am in charge of Messrs. Mackinnon, Mackenzie & Co.'s coaling in Colombo; that is, I supervise all bunkering for the B. I. and F. and O. The firm is interested in the following lines here,

P. and O.

B. I.

Hein's line.

Australian Commonwealth and Ceylon Steamship Co.

Roughly speaking I may say that the B. I. use Indian coal here though they do use other coals on occasion. The quantity used is large: during the last three years there has never been less than 16,000 tons of it in stock. They might have 150 tons of Australian coal at present but it would not be much more. The percentage of other coals used by them is very small in comparison.

The P. and O. have not used Indian coal for many years except when they were unable to obtain their regular supplies and took a certain amount of it from B. I. stacks. The Chief Engineers on such occasions reported favourably on it.

I have had experience here of Japanese coal which was of indifferent quality though I cannot say what it was supposed to be, and after that for a time Durban coal. I have also tried Australian coals.

Comparative merits.—My experience of Indian coal here has been absolutely favourable. I cannot say what qualities have been sent down to us here, for Messrs. Mackinnon, Mackenzie & Co., who supply us only notify that the coal is "ordinary" "good" or "special." Provided quality is assured, I can say that Indian coal gives excellent results: if you could ensure that only good Indian coal, similar to our own supplies, was shipped to Colombo, I see no reason why it should not hold its own in the market. We have had reports from our Engineers which show that a mixture of Indian and Australian coal compares favourably with Welsh. Taking the average run of Indian and South African coals that come into Colombo, South African may be said as a general rule to come midway between Indian and Welsh, both for quality and in the way it has to be worked: but with coals such as we receive South African is no better than Indian coal. South African is a very much bigger coal than Indian, Welsh or Japanese: Australian coal is much the same as South African: it is not easy to distinguish them apart.

Spontaneous combustion in coal.—One objection to South African coal is a liability to fire. Our supplies of Durban coal, which were of fair quality, proved rather inflammable. I had to keep the stacks very low in which it was kept. I stack Indian coal in heaps up to 18 feet high, and I have never had a fire in it nor have I heard of one in Indian coal in Colombo. The Durban coal, however, I could not stack higher than 12 feet: there was a danger of fire if it was stacked higher. South African coal for this reason has to be kept out in the open: for if kept under sheds it will often take fire in damp weather. Other people here have had the same experience. I make it a rule not to keep any coal lying about here.

Proper use of Indian coal.—The secret of getting good results out of Indian coal is to work it in the proper manner. Most ships passing Colombo have white firemen who are accustomed to using Welsh coal and who cannot for that reason get the best out of Indian. To explain this point more fully I may say that Welsh coal should not be worked at all in the furnaces: it should neither be pricked nor be sliced, but it should be kept trimmed to the front of the furnace. It is fired in small quantities: it is small coal and if there are large lumps in it they are broken up before being used: and if it is worked in the furnaces it falls through the bars. (The slice is a long bar tapered off to a point: the pricker is a long bar with a blade 10 or 12 inches long at right angles to it, which is thrust in under the furnace and pricked in through the bars.) Indian coal require just opposite treatment. It should be fired in large quantities and should be worked well. With an ordinary multitubular boiler, Welsh coal will be fired four times, but Indian coal should be worked nine or ten times, i.e., it should have a pricker run under the bars to keep them clear.

One advantage of Indian coal over Welsh is that it can thus be pricked from below and does not require the furnace doors being opened so frequently: constant opening of the furnace door means loss of heat and is very detrimental to the boiler owing to the cold air rushing through the furnace and causing leaky seams and rivets in the back-ends.

Ash percentage.—If I were asked to say why less Indian coal is used nowadays in Ceylon, I should say that it was because people do not know how to use it, and owing to their not knowing how to get results out of it they give themselves a very large percentage of ash.

In good Indian coal the percentage of ash is not high: it would run to about 10 per cent. But people go out of their way to make the percentage higher. If they worked Welsh coal in the same way as they now work Indian, it would give practically as high a percentage of ash.

For a time we handed over the coaling of federal steamers to Messrs. Delmege Forsyth & Co. when I used to go on to the federal boats and say that they were to be given Indian Coal, they would protest——for no reason really except that they gave themselves extra trouble in handling Indian coal by working it wrongly and so getting a big percentage of ash. I pointed out to chief engineers that they were wrong about the ash percentage and that it was due to not working the Indian coal correctly: and I have gone below with them

to show the proper method of working it. They have commented that our method was altogether different from theirs. Twice I have given them Indian coal when no Australian was on hand, and they have told me when I asked about it afterwards (as I took care to do) that it had not been too bad.

Clinkering.—High percentage of ash does not necessarily mean a lot of clinkering and it is not my experience that Indian coal clinkers badly. Clinkering has nothing to do with the working of a coal but depends on its nature. If it is tarry it sticks to the bars and clinkers. The worst coal for this that I have seen here is some Japanese, the clinker from which stretched the whole length of the furnace: it had to be broken up inside before it could be removed.

Sale on Analysis.—An obstacle to the use of Indian coal in Colombo is that the people handling coal here are mostly laymen without a thorough knowledge of coals. In my opinion it would be beneficial to the prospects of Indian coal if in forwarding consignments of coal the Calcutta seller gave the Colombo importer an analysis of the coal. Even a layman would soon pick up enough to know what an analysis meant. It is not sufficient to tell a man who has no great knowledge of coal that a particular quality has a high or low percentage of hydrogen, carbon, sulphur or any of the other ingredients, but if he is given an analysis with each consignment it would in time be a guide to his knowing a good quality from one inferior. It should not involve much trouble to get out the analysis in Calcutta.

Measures for popularising Indian coal.—In my opinion three things are necessary if Indian coal is to recover the Colombo market:—

- (1) it should be cheaper,
- (2) steps should be taken to make sure of the quality, and
- (3) it would be beneficial if a copy of the analysis were sent with each consignment.

Handling of coal in Colombo.—The general custom is to discharge the coal down shoots into lighters from buckets which hold about one ton each, take it to the Jetty, bag it before it leaves the lighter and have it carried by coolies up to the stack, where the bags are emptied on to the heap. When an order comes for bunkering, it is bagged again and taken out to the ship in lighters.

As regards the comparative cost of this method of handling coal, it must be remembered that the pay of the coolies has gone up by 300 or 400 per cent. It is very easy to measure coal thus loaded in bags: if an engineer wishes to check the weights, it is only necessary to tally the bags and check the mean—i.e., to take one out here and there for weighment. It runs out very close. The basket is good and cheap for loading coal but it is not suitable for tallying.

Rate of discharge.—I have discharged 1,700 tons in a day from a ship, when using whips, but the average would be 1,000 tons a day: we do not give whips now because of the expense of Manila ropes.

Usually we work both sides of a ship, but in rough weather we ordinarily shut out the weather side: even so we never do less than 600 tons. We turn a ship round in six or seven days. We took a very short time lately to turn round the "Nalgora" with 10,000 tons. That is not too much to load in one ship: for if a coal is inclined to heat, it will heat with 2,000 tons as well as with 10,000.

Normally when I say so many tons "per day" it means every 24 hours but our coal is worked only from seven in the morning till six at night. The 1,700 tons was done in a day of this length.

The Ceylon Wharfrage Co., who handle all our labour work, are most satisfactory: they trim the boats correctly with the coal not piled up too high in the middle. The result is little wastage. It is a different matter when one works with stevedores who trim the lighters badly: when the coal is piled in the middle of the boat, every fresh bucketful discharged means that a lot of coal is shot off each side of the pile into the water.

So far as I have worked it out with proper handling shortage runs within 2 per cent.: improper handling sometimes means a shortage of 160 tons on 7,000.

A. B. DIXIE, Esq., Messrs. Clark Young & Co., Colombo.

(Oral evidence—December 17th.)

This is our head office. We do not buy or import on our own account. We were agents previously for Hull Blyth & Co., and for the Bengal Coal Co. Last year the former severed their connexion with us but we are still agents for the Bengal Coal Co., and for no other company. We have always imported their coal for the Gas Company and in pre-war times usually held the railway contract; now it is fixed by the Coal Board in India and probably it is held by Messrs. H. V. Low & Co.

Local opinion as to relative merits of Indian and South African coals.—Excluding the Railway's demand, the coal that goes into consumption here is mostly for bunkers: Government, apart from the Railways, takes 1,500 tons a month. The prospects of Indian coals competing successfully with those from other countries depend on the reports of Engineers to owners and so far as I can ascertain Engineers prefer Natal coal to Indian: the reason, I should say, is that in some cases the Coal imported here from India is of very poor quality. On the question of the quality of Indian coal as against that of Natal, I think that the reports of the Government Railway tests would afford useful information.

Measures to be taken if Indian coal is to recover a footing in Colombo.—Indian coal seems to have lost its good name: as the three cases already quoted by me will indicate, it is more a question of quality than of price. Naturally a consumer will take Indian coal if it is going at a price that pays him in spite of quality: but the important point is that the present difference of Rs. 2 or 3 does not cover the proposed difference in quality. The coal that we were quoting was new coal only three months in Colombo, not one that had deteriorated. I cannot speak of its quality from actual experience. An arrangement by which certificates as to the mine and seam were given with coal exported from India would be a great advantage once a quality had established itself: but naturally it would have to establish itself first.

Our experience here does not tally with the evidence given in Rangoon that a test of quality favours India as against Natal coal. I have had no complaints about the quality of the coal that we get from Andrew Yule & Co. and there is no other Indian coal here.

I cannot commit myself to an opinion how far the price of Indian coal would have to come down before it got a market or whether Natal coal would not chase it down. A further drop of Rs. 2 should be ample and probably Rs. 1 would be enough. The local consumer is not the most important, and as to supplying steamers exchange is a very important factor: the present rate is Rs. 13.50.

The chief local consumers are Government (1,500 tons a month for launches, etc.), the Spinning and Weaving Mills (100 to 150 tons), the British Ceylon Corporation Mills (100 to 150 tons) and the municipality (small amounts).

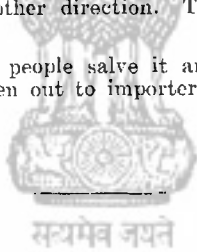
Natal coal is bought and sold in sterling. It would help if India quoted in sterling. We were the first firm to import Indian coal into Colombo and for years worked on a sterling basis. We have to sell to steamers in sterling. Here people used to pay on coal when it is shipped in Calcutta. This is the usual arrangement but it is only an arrangement made between the buyer and the sellers in each case. Natal coal is bought in sterling in London. The Colombo firm delivers the coal and gets a sterling draft from the captain payable at 30 days: the question of exchange does not come in. We should not therefore consider the Singapore suggestion as to payment on delivery as of any great importance.

Out of the 3,000 tons of Dishergarh sent down by Messrs. Andrew Yule, we have 2,000 still on hand. It was a speculation on their part with the idea of getting back into the Colombo market: they sent it down as a part cargo along with coal for the gas company. It would not facilitate the sale of Indian coal if it were sent down in small parcels: it would only cost more in freight. The stacking ground is there and its rent has to be paid: even if coal is transhipped as it often is the port charges would have to be paid and only landing charges would be saved: conditions here are altogether unlike those in Singapore.

Before the embargo Indian coal had a reputation that was not exactly bad but on occasions there were many growls about it—as is natural with any coal. Now Natal coal has got in and engineers prefer it: naturally they will do their best to avoid a change. There is no question, I should say, of firemen on the local steamers not knowing how to use Indian coal to advantage: they had to use it for fifteen years and know how to do so. Mr. Campbell has better knowledge on this point than I have but that is how it strikes me.

Fires.—There has been very little difficulty about Indian coal firing: occasionally in the hot weather it has overheated in the hold and there have been small outbreaks: but they were small and it cools down quickly. Coal here is mostly stacked in the open, which is better than keeping it in sheds. The iron supports seem to bring the heat down into the coal stacked in sheds. Years ago when stacking in sheds was common that was where fires used to start. Admiralty coal is all in sheds, but the rest mostly in the open. I should put the amount in the open at 75 per cent. but I rarely go down that way: our stacks are in the other direction. The sheds are the property of the coal firms.

Salved coal.—The harbour people salve it and recover so much as costs. It is all mixed up and is given out to importers in proportion to their total imports during the quarter.



**G. W. DODDS, Esq., Harbour Engineer, Colombo, and
W. WHITE, Esq., Engineer, Harbour Board.**

(Oral evidence—December 15, 1924.)

Personally I have very little concern with coal. The coal-grounds belong to Government but are let out to private persons. All we do besides letting out the grounds is to provide and maintain jetties for them. The rent is Rs. 10,000 per annum per acre, including the jetties. All coal here is landed from lighters.

We use about 10,000 tons a year.

Comparative merits.—We used Indian coal for many years and found the quality fair. Now we use mainly Natal and some Transvaal. It is bought by the Colonial Storekeeper. The quality of Natal coal is good. We had to complain about one consignment but apparently it had been lying in stack for some time: a few days later we got a supply from a newly landed consignment and it was good stuff. The Natal coal that is now being burnt is better than the Indian coal that we used to burn: it has not got so great a percentage of ash.

We have to alter the furnace bars for Natal coal but that is no trouble: it merely means taking out a bar and spacing the rest: a steamer with forced draught is different but with an ordinary steamer it is not difficult. I have

known a steamer changing the type of coal that it was burning in the middle of a voyage, and altering the furnace bars then.

I do not know what varieties of Indian coal we used to burn: we got it from the Ceylon Government Railway: they could not manage to supply enough to us and so our coal supplies were arranged by the colonial store-keeper.

We do not need a high grade coal except for the graving dock, as to which it is a question not of cheapness but of efficiency because the quicker we empty the dock the sooner the steamer gets away again. At one time we used nothing but Cardiff for this. We cannot get anything like such good results with Indian coal: we could not empty the dock in the same time with three boilers as we did with Cardiff but have to use four.

It was probably owing to the embargo that we changed. I should think that the reason why Indian coal finds it hard to get back on to the Colombo market is the conservatism of the purchasers. It was the same with Welsh coal after the war: there was some slowness in getting back to Cardiff from Indian. So now with Indian coal after the embargo.

**T. E. DUTTON, Esq., General Manager, Ceylon Government
Railway.**

(Oral evidence—December 17th, Colombo.)

Comparative merits.—The bulk of the coal used by this railway has in the past come from India. We have tried other coal as well, and I consider that Natal coal can compete favourably with Indian. On tests it gives better results. We conducted a series of practical tests from 1909 up to the present on different parts of the line.

The following figures are typical:—

Year	Lbs. per mile.	
	Indian	Natal
1909-10	37·74	33·99
1911-12	43·55	38·78
1923-24	70·15	63·13

The increase in the different years was due to larger types of engine being used for the tests: but it will be noticed that throughout Indian coal is about 10 per cent. worse than Natal. Therefore the price of Indian should be 10 per cent. less than that of Natal coal.

Natal coal moreover gives 30 per cent. to 50 per cent. less ash than Indian. How large the difference is may be gathered from the fact that Indian coal on one particular piece of the line gives 41 cubic feet of ash whereas Natal gives only 20. This is important from a railway point of view: one has to put 10 per cent. more Indian coal into the firebox than one does Natal and take 50 per cent. more ash out. Indian takes far more clearing than Natal coal, although our Engines are fitted with rocking grates to get rid of ash. It does not clinker badly, though it does clinker occasionally. The necessity for clearing ash frequently makes a difference to time keeping: on one section we have to allow time for clearing three times when using Indian coal, while with Natal we can run right through.

The Indian coals which we tested included all first class coals. In 1909-10 tested the following Indian coals: —

Jharia.
Kenwadih.
Bararee.
Sutikdih.
Banksimulla.
Chanch.
Baraboni.
Tectulmuri.

The Natal Coals tested were—

Burnside,
Natal Navigation,
Durban Navigation,

and other first class African coals.

In 1923-24 we only got mixtures of Indian coals: we cannot get a full shipment from one mine now.

Grading and certification.—The idea of having a certificate showing colliery and quality appeals to me. The testing and grading of the coal should be on the lines of the Report of the Coal Testing Committee, Colony of Natal, 1904-5, to which we frequently refer: South African coals seem still to have the same relative values that they had then. We bought 15,000 tons of Natal coal this year: it was sold as first class under a certificate. We do not get the certificate of class; that is given to the pit. What we get is a certificate that the coal is from a particular pit, a railway certificate giving the wagon numbers, the amount of coal, and the mine. This is in addition to the pit certificate of which the form has been given to the Committee by Mr. Henham-King of Messrs. Hull Blyth & Co.: I shall furnish the Committee with a copy of it. In this way we know what we are getting when we try South African coal. It is not altogether necessary for us actually to see the certificate: but the mere fact that it is given means that some one at the other end is watching the coal.

What we want is a certificate on which we can rely: the particular form of it is not important.

The grades of Indian coal which are eventually fixed should be published in the same way as in the South African report of 1904, so that when one gets a coal one can turn up the Government list to see what it is. At present we have no list to which we can refer about Indian coals, such as we have for Natal coals; we know whether we have had a particular Indian coal before but we do not know whether a consignment that we now get is from the same pit as a previous one.

India should let us know the classification of the pits and in addition devise some system of inspection. Probably it would be beyond the present staff of the Chief Mining Engineer to do all the inspection necessary.

We test the Natal coals here and our results agree very closely with those which they publish. In 1909-10 we had coals from the particular mines for which South Africa had published test results and made our own tests. But there is no published information about the different coals in India.

For Natal coal not only do we have this definite information as to the seams but we can tell that a consignment comes from a particular seam.

We publish specifications in our tender notice of which I can give a form.

Purchasing Policy of Ceylon Railways.—The object with which we have recently invited tenders for 30,000 tons of Natal coal is to see what we can

get that will compete with Indian coal. We do not want Indian coal against this tender: we have got all the Indian coal coming that we want for some months ahead.

I have not made up my mind about next year's contract: whether we shall forsake Indian coal for South African depends largely on the result of the Natal tenders now invited. It will be a question of price combined with quality. Apart from its failings in these two respects we have no active objection to Indian coal. Its quality has deteriorated: the best Indian coal that we have had was in 1916-17, from Messrs. Andrew Yule's. As to price coal that used to cost Rs. 3-8-0 at pit-head now costs Rs. 11-4-0. We shall probably see where we can do best next year. Of course if this committee could arrange for the Ceylon Government to be supplied with information similar to that given by Natal and arrange for coal at a price (including freight), it might do some good. But I cannot commit it myself at all.

We want next year—

- (1) a definite statement of the seam from which the coal tendered would be supplied,
- (2) an analysis of the coal,
- (3) the name of the colliery supplying it,

and, since we get a 10 per cent. better result from Natal coal than from Indian, the price quoted for the Indian coal must be 10 per cent. lower than that for Natal to equalise its chances.

There is another point and that is the influence of exchange: with exchange at its present level, Indian coal will, I think, have to be put in at Rs. 16 or Rs. 17 a ton if it is to secure orders here, with a more definite guarantee of quality than we have ever had in the past.

The quantity of coal that we shall require next year will be 10,000 tons a month.

We now buy f.o.b. Calcutta and pay steamer freight ourselves, at the rate of Rs. 7-50 per ton, on a separate freight contract. We should prefer to buy c.i.f. Colombo.

On our previous arrangement we used to test coal when it arrived. Now it is passed by the State Railways Mining Engineer and, if in use it does not turn out as good as it should be, we can only report to him.

Loading at Calcutta.—In 1916 it took from 36 to 40 hours to load a steamer; now it takes seven days or longer. Andrew Yules used to load in a very few days. It is important to us to get in our shipments in time. If the coal takes two days to load and seven to come, it allows a better price than if it takes seven to load and seven to come. It does not affect us except when arranging a contract.

Wastage.—We find this to be about 1 per cent.: it runs to between $\frac{1}{4}$ and 1 per cent. taking all the shipments. We get 70 tons out of the harbour on imports of 30,000.

When we bought c.i.f. Colombo, we used to get a 2 per cent. allowance. Since the war, buying on bill of lading weights, we have not been getting it.

We do not find that there is an undue proportion of dust in the Indian coal that we have been getting, and we have had no difficulty about size. From the published reports Singapore apparently gets a lot more smalls than we do.

Natal freights and prices.—We pay for Natal coal in rupees. We bought some best Natal at 27 shillings six months ago: it was about the best shipment that we have had. The freight was, I think, 11s. 6d. and 12s. 3d.; it was not paid by us. Freight from Durban is usually in the region of 13s. or Rs. 8-6s.

ANNEXURE I.

*Specimen Natal Coal Delivery Sheet.***S. A. R. & H.—COAL DELIVERY SHEET.****Bluff March 10th, 1922.****M. WILLIAM COUTTS & Co.****S. S. LOCH TAY.**

The undermentioned Trucks, containing Coal, have been taken delivery of. The Department does not hold itself responsible for correctness of weight, but every care is exercised in the compilation of such.

Truck Number.	Colliery from	Description of Coal.	Weight. T. C.
		<i>Bt. Fd.</i>	3,089 14
40120	Northern Natal Navigation .		45 2
60185			45 0
60876			45 1
1470			36 5
4832			31 5
60945			45 9
60724			45 4
60985		<i>Round</i>	45 0
7018			24 3
6594			24 3
60164			45 0
3529			35 0
60241			45 0
6906			24 0
60260			45 0
			3,669 17

Signature and Seal of the

S. A. R. & H. Port Natal.

ANNEXURE 11.

CEYLON GOVERNMENT RAILWAY.

Statement of Tests of Coals submitted for Trial for 1910 Contract.

A.—NATAL COALS.

	1	2	3	4	5	6	7	8	9	10
	Burnside.	Natal Navigation.	Glencor.	Natal Cambrian.	Elands-laagte.	St. Georges.	Durban Navigation.	Durban Merthyr.	Talana.	Newcastle.
Coal burnt, lb.	5,488	5,600	5,630	5,827	5,849	5,880	5,986	6,288	6,300	6,552
Water evaporated, gals.	4,146.76	4,988.49	4,821.28	4,211.23	4,321.41	4,365.4	4,353.83	4,237.34	4,326.76	4,221.5
Ash formed, smoke box c. ft.	7	9	9	8½	6	9½	5½	12	9	8
Ash formed, grate c. ft.	24	15½	18½	22½	21	17½	19½	21½	29	21½
Coal burnt, lb. per engine mile	31.41	32.05	32.22	33.35	33.47	33.65	34.25	35.08	36.05	37.5
Water evaporated, gals. per lt. of coal burnt.	755	783	767	727	738	742	727	673	686	644
Total ash formed, cubic feet	31	24½	27½	30½	27	26½	25½	33½	38	29½
Percentage of ash	18.23	15	17.14	19.7	20.3	15.3	15.6	23.6	24.96	19.15

NOTES.—All the above tests were made on No. 7 Up and No. 15 Down Trains between Colombo and Nawalapitiya, with uniform load in all cases. The same engine (No. 125) was used throughout with the same driver.

B.—INDIAN COALS.

	1	12	13	14	15	16	17	18	19	20	21	22
	No. 15 Jerriah.	Kend- wadiv Centre.	Bararoo.	Heilger's Bhulan- bararoo.	Saffikah.	Wan- sindia.	Chanch.	Teem- mih.	Sircar's Bataboni.	Jerriah.	Shaw's Best Steam Coal.	Balbari.
Coal burnt, lb.	5,082	6,134	6,238	6,272	6,436	6,543	6,598	6,650	6,706	7,102	7,107	7,280
Water evaporated, gals.	4,301.29	4,195.15	4,336.67	4,157.66	4,267.54	4,295.31	4,243.34	4,297.52	4,195.34	4,356.54	4,407.16	4,229.41
Ash formed, smoke box, c.ft.	52	61	6	6	13	7	7	7	6	10½	6	4½
Ash formed, grate, c.ft.	363	293	323	343	41	22½	38½	36½	30½	38½	48	55½
Coal, burnt, lb. per engine mile.	31.29	35.10	35.70	35.89	37.17	37.44	37.82	38.06	38.38	40.04	40.37	41.00
Water evaporated, gals. per lb. of coal burnt.	.732	.682	.695	.662	.676	.656	.642	.645	.625	.613	.620	.580
Total ash formed, cubic feet.	40	29½	38½	40½	43½	29½	45½	43½	36½	44	54	61
Percentage of Ash.	29	19.5	24.8	25.7	28.3	17	25.35	28.21	20.2	22	27.2	29.5

NOTE.—All the above tests were made on No. 7 Up and No. 15 Down Trains between Colombo and Nawalapitiya, with uniform load in all cases. The same engine (No. 12a) was used throughout with the same Driver.

ANNEXURE III.

CEYLON GOVERNMENT RAILWAY TENDER NOTICE.

Extract from the Ceylon Government Gazette, No. 6484 of January 12, 1912.

Tenders are hereby invited for the supply of 90,000 to 110,000 tons of Indian or Natal locomotive coal for use on the Ceylon Government Railway from July 1, 1912, to June 30, 1913.

2. A deposit of Rs. 100 will be required to be made at the Treasury, and a receipt produced for the same before any form of tender is issued. Application for tender forms must be made at the Office of the Colonial Treasurer, and applicants must satisfy him or a person delegated by him that they are in a position to execute the contract in a satisfactory manner, documentary or other evidence being produced for the purpose if called for.

3. The Indian and Natal coal merchants or contractors must tender through their agents in Ceylon.

4. Tenders must be in duplicate, and be accompanied by a letter signed by two responsible persons, whose address must be given, engaging to become security for the due fulfilment of the contract. The documents must be sealed under one cover, marked "Tender for supply of Locomotive Coal to the Ceylon Government Railway" in the left hand top corner of the envelope, and addressed to the Hon. the Controller of Revenue, Colombo, and must either be deposited in the tender box in the Office of the Controller of Revenue, or be sent through the post to reach the Office of the Controller of Revenue not later than mid-day on Tuesday, March 19, 1911.

5. A sample of every coal for which it is proposed to send in a tender must be submitted for testing purposes, irrespective of whether the coal has been previously tested, or has previously been in use on the Ceylon Government Railway. The sample coals for testing must be delivered into Railway wagons at the Wharf Railway Yard in lots of 15 tons, free of cost, loaded in bags, and with the name of the coal labelled on each bag.

6. No coal will be tested unless it is good railway repute and is in use on trunk railway lines.

7. The samples should be delivered as early as possible (*vide* notice in Government Gazette No. 6481 of December 29, 1911), but in no case later than Saturday, February 3, 1912, and must be from bulk and not hand picked.

8. No tender will be considered unless it is on the recognized form, and in respect of it each and every condition above laid down has been strictly fulfilled.

9. The schedule of tenders giving the name of the successful tenderer, but no other names, will be published in Government Gazette.

10. Security to the extent of Rs. 6,000 in cash or fixed deposit will be required to be furnished for the due fulfilment of the contract.

11. Should any person decline to enter into the contract and bond after he has tendered, or fail to furnish the required security, the deposit of Rs. 100 will be forfeited to the Crown, and the defaulter will render himself liable to be included in the list of defaulting contractors precluded from having any concern in a Government contract. All other deposits will be returned upon signature of a contract.

12. The Government of Ceylon reserves to itself the right, without question, of rejecting any or all tenders, and the right of rejecting any portion of a tender.

13. The exact quantity of coal to be supplied under the contract, irrespective of the additional amount mentioned in clause 16, will be notified to the successful tenderer.

14. The contractors shall not assign or transfer the contract for the supply of coal or any interest therein without the permission of the General Manager of the Railway.

15. The deliveries of the coal to be approximately as follows:—One-fourth to arrive on or before June 30th 1912; one-fourth to arrive on or before September 30, 1912; one-fourth to arrive on or before December 31, 1912; one-fourth to arrive on or before March 31, 1913.

16. In addition to the definite supply of coal as specified in clause 13 above, the contractors shall, if required, supply a further quantity of coal up to, but not exceeding, 15,000 tons, at the same rates and subject to the conditions laid down in the contract, and delivery of all or a part of this extra contract supply shall be given whenever required up to the end of March, 1913, on two months' notice in writing being given to the contractors by the General Manager of the Railway.

17. All coal supplied under this contract shall be of large size and free from stone, shale, and other foreign matter.

18. Plans showing the various holds, and the quantity of coal in each, bills of lading, and invoices must be transmitted by the contractors to the General Manager of the Railway, Colombo, immediately the steamers are ready for sea. The Charter parties and bills of lading to be in accordance with the terms of contract. The contractors must produce for the information of the General Manager satisfactory proof that the quantity of coal shown in the bills at lading and invoices is actually shipped in the vessels.

19. The coal shall be discharged from the steamers at the rate of less than 500 tons per working day.

20. The coal must be delivered over the ship's side free of all freight and charges, into craft, steamer, floating depôt, or pier in Colombo Harbour, and be at the risk of the contractors until it is so delivered.

21. Payment will be made to the contractors by the General Manager of the Railway for each separate shipment according to the quantity specified in the bill of lading, but deducting therefrom an amount equal to 2 per cent. for wastage.

22. If any of the coal supplied is objected by the Locomotive, Carriage and Wagon Superintendent of the Railway as not being of the quality contracted for, or as being inferior in quality to the sample submitted, the General Manager shall be at liberty to deduct from the price such sums as he may consider justifiable by reason of the inferior quality, or he may reject such coal. Whenever any coal is so rejected, the contractors shall at their own cost and expense remove the rejected coal, and pending removal the coal shall remain and be at the risk of the contractors, and the contractors shall in addition to any other penalty, be liable to refund to the General Manager the cost incurred in landing such rejected coal, and the cost so incurred, when certified under the hand of the General Manager, shall be deemed final and conclusive.

23. If the contractors at any time fail to supply the coal at the time and in the quantities specified in this notice (except under circumstances specified in clause 27 of this notice), or should any coal be rejected, the General Manager shall be at liberty to purchase elsewhere, at whatever price he may deem fit, such quantity of coal as the contractors may have failed to supply or as may have been rejected, and should the coal so purchased cost more than the contract price, the contractor shall be liable to pay to the General Manager the full amount of excess cost, together with all expenses attending the purchase and procuring of the same.

24. Should the contractors fail to supply coal in the quantities and at the time agreed upon (except under the circumstances specified in clause 27 of this notice), or should they supply coal inferior in quality to the sample submitted, or should they commit a breach of any of the covenants of the contract, the General Manager shall be at liberty by notice in writing, to forthwith determine the contract and thereupon the contractors will be liable to pay to the General Manager all cost and expenses incurred by the failure to supply coal, or by the supplying of coal of inferior quality, or by the breach of any other covenants of the contract, and shall in addition be liable to forfeit the sum of Rs. 6,000 deposited by them as security.

25. The General Manager of the Railway may deduct from sum payable to the contractors all sums payable to the Ceylon Govt. by the contractors under their contract, or such sums may be recovered by action at law.

26. The decision of the General Manager of the Railway as to whether the contractors have been guilty of any breach of their contract, and upon all questions arising out of or incidental to the contract, shall be final and conclusive and the contractors shall be bound thereby.

27. In the event of war, or disturbance, or strike or lockout of pitmen, or labourers, or pestilence, or epidemical sickness or earthquakes, fires, storms, or floods, or other hindrances, being the act of God or beyond the control of the contractors, the contract shall be subject to such modification as the circumstances may warrant.

G. P. GREENE,
General Manager.

GENERAL MANAGER'S OFFICE,
Colombo, January 4, 1912.

W. Y. FLEMING, Esq., Manager, Ceylon Wharfage Co., Colombo.

Oral evidence—16th December 1924.

My firm handles the greater part of the coal imported into Colombo (roughly three-quarters) on behalf of coal importers: we are handling agents and have no interest in coal as such. We put labour onto ships: discharge the coal into lighters, take it ashore and stack it: and when bunkering orders come in we reverse the process and put the coal into bunkers. It makes no difference to us whether it is Welsh, Natal, or Indian: the labour costs are the same for all of them. The charge for discharging overside into lighters is, I think, 45 to 47½ cents a ton: this is the business of the ship and not of the importers but the importers usually make the arrangements. The variation in cost is due to the difference in the gear provided by different ships.

Then the charge for lightering the coal to shore, stacking, loading again and bunkering works out to an average of Rs. 3.10. It is not worth while quoting the cost of each stage of the round trip because it varies with different contractors: and all coal except railway coal goes back again onto ship-board.

We bag the coal when landing it as a means of carrying it instead of using baskets. But when bunkering we bag it because it makes measurement easier and the actual bunkering very quick. Everything is ready when the lighter goes alongside and the bags of coal have merely to be handed up the ship's side, instead of the coal having to be shovelled into baskets alongside the ship as in places where coolies are plentiful and conditions easy.

Allowance for waste when discharging is 2 per cent.; there is none when shipping. Waste is confined to the stage when the coal is discharged through shoots. The end of the shoot is within regulation distance of the lighter and the coal is shot clean into the lighter: the only wastage is the dust that flies off.

To the charges that I have mentioned, you would have to add those for the rent of the ground on which the coal is stacked.

Quantity handled.

Colombo is doing 40,000 tons a month all told but sometimes does 6,000 tons on one day. The present monthly figure does not represent anything like the limit of the capacity of the port. Nowadays we consider a decent

day's work to be 3,000 to 4,000 tons bunkering and 2,000 more coming out of colliers. We can manage that easily and a bit more besides. The class of coal makes no difference as regards ease or methods of handling here. Before the war when everyone imported Indian coal in large quantities the same methods were employed as to-day.

Oil has cut in of late. I reckon that coal has lost. We are now bunkering 10,000 tons of oil a month, equivalent to 15,000 tons of coal. On the other hand some oilships might not have bunkered here to a corresponding extent if they had been burning coal: *e.g.*, the Australian boats, which take 2,000 tons of oil here but which would not have taken 3,000 tons of coal if they had been burning coal. I should say that oil has cut into coal to the extent of 10,000 tons a month.

Rate of discharge in charter parties is 500 tons a day: but we hardly ever have a ship working so poorly as that: the importer has a low figure put in to safeguard himself. We can do between 500 and 1,500 tons a day. Speedy work is costly: and the state of the port makes a difference. If only one collier is in, 2,000 tons could be handled: if there are two or three besides ships bunkering, the rate goes down. The average, taking all in would be nearer 1,000 than 500.

It is impossible to bunker direct from one steamer to another; and nothing is done from ship *via* lighter direct into ship. The basis of the coal work here is the bag. It is essential for speed, and also it is inevitable in rough weather. In the N. E. Season we sometimes have waves four to six feet high in the harbour. It would therefore be difficult for coolies to bag coal alongside the collier: so we bring the boat in to the jetty, bag the coal on the jetty as it is landed, and pass it across the jetty into boats on the other side. Bagging tends to expenditure alongside the ship. If you have 2,000 tons of loose coal to bunker, it is a slow job putting it in baskets and passing it up the ship's side: it is much quicker with bags. I should say that bags would not be worth trying at Calcutta: you could not improve on the work at Matiaabruz by bagging; baskets work very well when it's a question of dropping coal into hatches. Here it is a question of shoving coal through ports up stages against the ship's side with the boats bobbing about: and bags are very useful. At the end of January or February you would see coaling here going on under great difficulties: sometimes we have to shut down on the weather side altogether. The cost of the bags is a consideration: they are locally made coir bags: jute would not stand the wear and tear.

Measurement is by steamer's bunker space. From the *dépôt* we go by the measurement of the barges and tally of bags: we have some 40 and some 80 ton barges: also we can calculate so many bags to a ton. If the ship's engineer wants further check and is not satisfied with measurement in his bunkers he can send a man ashore to weigh 10 per cent. There are different methods of calculating weight. The French have one of their own, for example.

The big difference between Colombo and Calcutta is that here we have to have our coal all ready for quick loading; when it is bagged, it has only to be lifted: in Calcutta and elsewhere it has to be filled into baskets. We get advices when coal will be required, and the big firms always keep 300 tons or so ready bagged. The average speed of bunkering is 100 tons per gang per hour: if a ship has ten ports the work goes so much the faster: if only five then so much the slower. Yesterday we put 1,500 tons into the Moldavia in 12 hours.

R. FOWKE, Esq., of Messrs. Aitken, Spence & Co., Colombo.

WRITTEN STATEMENT.

18. Comparative merits.—There can be no question that Natal and Transvaal coal particularly the former, are better than Indian, and in my

opinion about 5 per cent. more Indian coal would be consumed as against Natal. It is difficult, however, to give an opinion in this respect as very little Indian coal has been imported into Ceylon since the embargo was placed on it by the Indian Government, but from reports which have come to hand from time to time I understand that the quality of the Indian coal supplied as bunkers to steamers in Calcutta varies considerably, and that it is almost impossible to obtain any coal of the quality previously supplied. Many Captains have reported to us that, in regard to the present Indian coal, when the fires are being cleaned the speed of the vessel suddenly drops to about 5 or 6 knots. At one time it was thought that South African coal required to be understood by the Engineers before the best results could be obtained from it, but it is now, particularly since the embargo was placed on Indian coal, so generally used that Engineers appear to understand it, and no difficulty in this connection seems to arise.

Difference in price at which Indian coal could hope to compete.—Provided that Indian coal of good uniform quality is exported to Colombo, I consider that it should be able to compete with Natal at a difference in price of about 5 or 6 shillings per ton, but when Indian coal has regained its footing here this difference would probably not be so much.

Certificate of quality.—In view of what I have said above regarding the variation in the quality of the Indian coal supplied at Calcutta as bunkers to steamers, I consider that a certificate of quality, provided that it is issued by a competent person, would be of assistance.

Breakage of Indian coal in transit.—In my opinion Indian coal does not break up into small unduly in transit.

JOHN GIBB, Esq., Colonial Storekeeper to the Government of Ceylon.

(Oral evidence—December 17th, 1924.)

I returned from home leave yesterday and am perhaps not fully acquainted with recent developments but Mr. Warby, my Assistant, whom I have brought with me and who has been acting for me will be able to correct me if I make any statement that is not in accordance with the position to-day.

All coal purchased by Government locally is bought through my office, and subject to certain reservations all supplies costing over Rs. 1,500 are offered to public competition and are dealt with by the Permanent Tender Board. The Permanent Tender Board consists of the Hon'ble the Controller of Revenue and myself coupled with the Head of the Department calling for tenders.

It has been the policy up to now to incorporate the whole of this Government's requirements in coal in one contract; but where the quantity provided for in the contract proves insufficient for our requirements resort is had to a local contract.

Excepting small quantities of Welsh coal only Indian coal was used by this Government until short-supplies from India compelled tenders being called for Natal coal. The reasons why other countries' coals have become popular in Ceylon are the prohibition of export from India and the bad quality of the Indian coal supplied.

When tenders for coal are advertised by my Department tenderers are asked to tender to the specification attached to the schedule.

Coal purchased by the Ceylon Government Railways are subjected before acceptance to practical tests.

I believe the various coal interests in South Africa are to make a bold bid to hold the Ceylon market, now that they have got a footing in it and unless

India can put into the Ceylon market coal that can compare favourably not only in quality but in price African coal will have no difficulty in keeping the Ceylon market to itself.

I imagine that the name "Dishergarh" "has been abused" it is no longer regarded in Colombo as in any way a guarantee of quality.

We have no complaints about Natal coal since taking it up.

In view of the low shipping rates that Welsh coal can be shipped to Ceylon at, it may have a restraining influence on the consumption of Indian or African coal.

There have been complaints about the clinkering of Indian coals during recent years.

Certificates of Quality.—If we could obtain reliable certificates of quality with coal exported from India showing the colliery from which it came and the class to which it belongs, that would incline us to some extent to look favourably on Indian coal. We should much prefer to buy on such certificates as it would help us in shipments. So long, however, as we got good Dishergarh coal as we did until the war broke out, we had no complaints. During that time, a lot of rubbish came on to the Ceylon market.

Even without certificates, the Government of Ceylon is protected when buying coal, because it insists on getting coal which must answer certain tests. Certain coal merchants on the other hand cannot tell what is the exact quality of the particular coal handled by them when I advertise that the coal supplied to us must meet certain tests. If coal is being sold through local agents, it would be most useful to have a reliable statement of the ash content and the calorific value of the coal sold. I certainly think that coal should be sold on analysis if you want to rehabilitate Indian coal. In fact, I see no other way of doing so.

Requirements of Ceylon Government.—As regards the amount of coal purchased through my department, the intention is to incorporate all Government requirements into one contract; but when the amount purchased under one contract proves insufficient we have to buy outside. Next year, we shall go into the best market, wherever it may prove to be. There is no intention of differentiating against Indian coal as such. The only objection that I see to Indian coal is quality. In price, it runs about the same as Natal coal but in many respects it works out dearer. However, I see that its price is coming down.

This Government's requirements next year will be over 100,000 tons. The last contract was for 90,000; but we have had to buy in addition about 1,800 tons a month. I should think that it would be safe to reckon on the figure reaching 120,000 tons.

Coke.—Up to the time before I went on leave I had failed to get good hard foundry coke from India. We made attempts to get it but the samples sent down here were very poor. In consequence, we were driven into the Natal market. The amount of coke used varies from time to time: I should say that it would average about 50 tons a month. India has lost a tremendous number of orders locally for foundry coke. It comes in from South Africa at cheap rates on the same ships as the coal. But if the quality of the Indian coke were comparable to that from South Africa I cannot see how the latter could compete with Indian: The longer sea voyage should be definitely against it although freight complications might come in. As regards coke shipped from Calcutta, there is always a tremendous loss in weight. This year we have already had two samples from India through two local agents, but the quality is not nearly up to that of Natal coke.

S. BARKER JOHNSON, Esq., Manager, Colombo Gas and Water Co., Ltd.

(Oral evidence—December 18th.)

1. Experience of Indian coal.—I have had considerable experience of Indian coal which is the only coal used by this company during the last eleven years. We were exempted from the embargo of 1921. We got Sanctoria coal till three or four years ago: since then we have been getting Dishergarh which has almost the same properties as Sanctoria.

In November 1923 we tried a consignment of Nimcha and Sankharpur coals from a Calcutta firm of the highest standing whose representative in Colombo induced me to try it by showing me what professed to be an analysis of it as used by the Calcutta Gas Works. From this it appeared to be analogous to Sanctoria coal and for this reason and because it was offered in quantities up to 10,000 tons a year at the attractive rate of Rs. 24 per ton c.i.f. (or in the region of Rs. 27 delivered) I tried 500 tons. It turned out to be altogether useless; there was no gas in it, for coking it was useless, and it contained a lot of slate. I gave it a really good practical test for a fortnight, not merely for a day or two, and it gave us continual trouble. I ended by selling off 380 tons for what it would fetch for burning under boilers and the loss amounted to Rs. 6 per ton. The two coals were kept distinct. I consider that the whole thing was very unfair because it was the standing of the firm that induced me to purchase. Our home office took the matter up with theirs and got no satisfaction: after protracted correspondence we were allowed a rebate of 25 cents. per ton: but we bought our experience dearly. Apparently the firm's Madras office had more to do with the transaction than Calcutta.

Our present contract is with Messrs. Andrew Yule & Co. for 2 years, at the price of Rs. 18.50 f.o.b. Calcutta. The quantity is 10,000 tons per year but the amount that we are using is increasing and it will soon be 12,000 tons per year and over.

Costs.—The freight that we have been paying lately has been, highest Rs. 8.50 and lowest Rs. 5. The latest freight rate was Rs. 5.50. Landing and delivering charges amount to Rs. 3.10 per ton. Coal import duty is 25 cents. per ton and insurance is, say, 25 cents. though in the hot weather it comes up to Re. 1 per ton. I put in a statement of prices and freights.

	Rs.		Rs.	Rs.
1914	17.51	per ton delivered.		
1915	16.86	" "		
1916	18.25	" "		
1917	27.61		Freight 13	
1918	46.02		" 30	
			" 20	
1919	38.74		" 20	
			" 20	
	Rs		" 16.50	16.50
1920 Coal . 12	33.93	delivered	" 18	17.50
			" 16	15

	Rs.	Rs.		Rs.	Rs.	Rs.
1921 Coal	17	31-66 delivered	{ Freight	9-50	8-25	
			{ „	11	10-50	
1922 „	20-50	32-38 „	{ „	8-50	8	8
			{ „	7-25		
1923 „	19-25	31-01 „	{ „	7-25	8-50	
			{ „	7-50		
1924 „	18-50	28-60 „	{ „	7	8-60	
			{ „	7	5	5-50
1925 „	18 50					

Comparative merits.—We must have a gas coal but no Indian coal is as good as English for this purpose. We have tried a little South African coal but it is no good as a gas making coal: it is not even as good as Nimcha. Japanese coal is better than Indian for our purpose but it is probably 15 years since we had any down here.

We are very satisfied with our present arrangements and we know where we are with Indian coal but there are times when we have to pay through the nose for Indian freight. It has been as much as Rs. 15 or Rs. 16 from Calcutta and then it pays us to get coal from England. English coal can now be landed at a little over £2 per ton, i.e., at Rs. 26-12, as contrasted with Rs. 24 for Indian.

I have recently had an analysis made of our coal: the results are as follows:—

Moisture	2-00 per cent.
Volatile carbon	29-73 „
Fixed carbon	56-52
Ash	11-75
	100-00
Specific gravity	1-375
Coke	68-27 per cent.
Sulphur	0-10 „ „
Nitrogen	1-99 „ „
Carbon	72-80
Hydrogen	5-80

The sulphur and volatile carbon content is low (for gas making purposes, the lower the sulphur content the better) but ash is high. I have known our ash-content to figure out as high as 17 per cent.: the average would be about 12 to 15 per cent., I should say, but the shipments vary. The coal usually arrives in good condition: There is not a lot of dust in it or smalls. If there was a lot of dust we should object strongly, but we don't mind smalls: in fact, we disintegrate our coal before we use it. We get 4 or 5 shipments each year, not in quantities large enough to allow of full cargoes; that is where our difficulty as to freight comes in. We have a shipment of 4,000 tons coming down now.

We work on a sliding scale and any saving that we make on coal is passed on to the consumer. We are out to make our profit by increasing our sales of gas, and that is why we are so anxious to get cheaper coal. In Colombo gas comes to about the same as electricity. It is much cheaper for cooking purposes and its use is extending rapidly.

Certificates.—After our experience with the consignments of Nimcha and Sankharpur coal, I should hardly care to trust a certificate again.

**A. HENHAM KING, Esq., Manager, Messrs. Hull Blyth and Co.
(Colombo), Ltd.**

(Oral evidence—December 17th, 1924.)

We handle about 60,000 to 80,000 tons of coal a year. At present we stock only Natal coal. I personally have had no experience of Indian coal but my firm used to stock it at several of their Eastern depots.

South African coal.—We get our Natal coal from individual collieries, not from any coal-owners' association. We get, as usual, a colliery certificate that the coal is from a certain colliery and that it has been screened. It is signed by the manager of the colliery. It is much the same as the Welsh colliery certificate. It is in the following form usually:—

“We hereby certify that the.....tons.....cwt. of coal shipped on board the S/S ‘.....’ are of the well-known superior quality distinguished by the denomination of..... and that the same were fresh wrought and screened at the colliery.

(Signed by the Manager
of the Colliery).”

Freights from Natal vary between 13 and 17 shillings.

The quality of Durban Navigation (Natal) coal is entirely satisfactory. We have had no fire in any Natal coal since we started handling it, which is ever since India stopped exporting it. It might be Transvaal coal that is liable to spontaneous combustion, but I have had no experience. We have never tried Transvaal coal.

Comparative Merits.—I have no personal knowledge of the comparative merits of Indian and Natal coals and can only give views that are based on remarks by ships' captains and Engineers. The result obtained from these coals depends a good deal on the firemen of the ships using them. Most ships passing through Colombo have European firemen who can make nothing of Indian coal; whereas sometimes oriental firemen can make it give good results. It is a matter of working the coal properly, presuming that it is good quality Indian coal to start with.

Prospects of Indian coal in Colombo.—To get Indian coal back on the Colombo market, two points must be looked to, quality and price. If quality is secured and price brought down there is no reason why it should not get in again.

We handled nothing but Bengal coal before the war: it was Dishergarh coal from the Bengal Coal Company: we gave it up merely because it was impossible to get supplies. Last year we tried to reintroduce Bengal coal to this market: but we could not get a favourable quotation compared with Natal.

(To Mr. Bray.)—I should say personally that for Indian coal to sell, its price should show a 4 or 5 shilling reduction on that of best Natal. We handle only the best Natal coal and confine ourselves to one Colliery, Durban Navigation.

(To Mr. Banerjee.)—I do not know if it would be a business proposition to mix Indian with other coals, such as Welsh; it would not be possible for us to experiment. We contract with owners for a year in advance for a definite coal. We are now fixing up our 1925 contracts, and if any shipowner wanted to have the option of taking either Natal or Indian, we should have to stock both. So far as I can see there is no chance of Indian coal getting on the Colombo market again till 1926.

S. SHELLEY, Esq., Messrs. Delmege, Reid & Co., Colombo.*(Oral evidence—December 18th, 1924.)*

Comparative merits of Indian and Natal coal.—Until the embargo came into force in 1921, we always handled Indian coal but since then we have handled none. At first this was because we could not get any, and afterwards it was because we found that the South African coal which we were getting compared very favourably indeed with Indian. By what the Engineers told me, I should put the superiority of Natal coal over Indian at 5 or 6 per cent.

As regards the price at which Indian coal might find a market again in Colombo, I should say from the enquiries which I have made of ship-owners that, if the best quality were sold at 3s. a ton less than Natal coal, it might get in. At present Natal coal is selling at under 30s. per ton c.i.f. The highest at which we could think of handling the best Indian coal would be Rs. 18 and it should be less: we might put it at Rs. 16 or Rs. 17 to be on the safe side. During the war the quantity of the Indian coal that we were getting was restricted and it was all pooled: in consequence we could not procure the lines that we used to get when we were able to choose our sellers for ourselves.

Certificate of quality.—I should think that a certificate of quality was absolutely necessary. We want a guarantee that the coal supplied to us is first class coal. I should prefer to buy on the name of the mine or on the seam and personally I should think a guarantee from an outside authority would be the best. I suppose that the Chief Mining Engineer does know about coal and therefore could manage this. As to certificate of analysis, I should say that we cannot buy by that alone, for analysis and calorific value do not always work out on a cargo of coal as they do on sample.

The chances of Indian coal in Colombo depend on what we could do with the ship-owners. To induce them to buy it would be uphill work as it was originally when coal from India came into Colombo and it would require a lot of propaganda work. In any case it is too late to do anything for 1925: we are making our contracts now: they are for Natal coal and there is no chance for Indian coal at present.

Freights.—The freight from South Africa is, at present, from 12 to 14s. a ton.

Weights.—We buy on bill of lading quantity less 2 per cent.

Quotations in sterling.—We used to have quotations in sterling and this was the practice during the war. Possibly it would be an advantage to have quotations in sterling from India because it would eliminate the risk of exchange: but it is a moot point and I should have to consult London before I could get a definite opinion.

Prejudice and Indian coal.—In my opinion the remarks in the leading article in the "Times of Ceylon" about Indian coal are rather severe perhaps, because the Indian Government may have been driven to do what they did. But it does not matter to us where we get our coal from and sentiment would not come in. So long as we can get regular and good supplies of coal that we can sell at a profit, that is all we want.

South African coal has no representatives up here unless we consider Hull Blythe to be such because they have an office in Durban.

I have had experience in Natal coal since 1921 and have not noted any change since first I knew it. The quality is always very uniform.

We have handled Whitbank (Transvaal coal) for Ellermans but not as a rule on our own account. We had one cargo of it; the consumption is higher but it is cheaper by Re. 1 a ton than Natal coal. $\frac{2}{3}$ Natal coal and $\frac{1}{3}$ Whitbank makes a good mixture.

If ship-owners consult their engineers, they will refuse to touch Indian coal because engineers prefer South African. They have no recent experience of

good Indian coal, but Indian coal always gives more trouble to the stokers and it requires constant attention to get the best results. European stokers will not take the trouble in Eastern waters to prick and to fire at frequent intervals. They prefer Welsh coal, which they can shove into the furnace and leave for some time. Besides Indian coal gives more clinkers than Welsh coal. The best Indian coal however is as good as Transvaal and the really best is only slightly inferior to Natal.

The necessity for adjusting fire bars to suit Indian coal is well-known to engineers on ships which regularly visit Colombo but ships which come in casually and change to Indian coal do not make any difference in their treatment of the coal and so get bad results. But as against Natal coal, steamers would not be put to any extra expenditure if they change to Indian.

Liquid fuel.—The competition of oil in the bunkering business is increasing but I do not know how it compares in price with coal. My firm does not handle oil.

R. H. SKRINE, Esq., of Messrs. Skrine & Co., Colombo.

(Oral evidence—December 16th, 1924.)

The coal that we handle is Welsh and Natal. Originally we confined ourselves to dealing in Welsh and Indian coals, but when the embargo was imposed on Indian coal we went in for coal from Natal. I should explain that we are merely agents for Messrs. Cory Brothers of Cardiff and do not buy ourselves on our own account. We are interested in shipping as well as in coal, being the Colombo agents of the Harrison and Indian African lines.

In my opinion it is really the introduction of oil fuel that has been the most serious factor in the coal position in Colombo. When the embargo was imposed we had to go elsewhere for our coal although we had no desire to do so. Of course we understand that it was not the colliery proprietor who was to blame for the embargo: but once we had had experience of Natal coal we found that it was so satisfactory that we had no wish to revert to Indian. It is true that on occasions we have put up suggestions to Messrs. Cory Brothers for dealing again in Indian coal: but they have been unable to see their way to do so. If there had been no embargo I should say that India would still have been supplying about 60 per cent. of the coal taken in Colombo and that Natal would be supplying 10 per cent., although of course Natal might have cut in more vigorously.

The chance of India competing successfully with Natal in the Colombo coal market is largely a question of price. If India exports sufficiently cheaply a sufficiently satisfactory quality of coal it might succeed in getting back into the Colombo market.

Quality.—I have recently been told by one of the ships' masters on a line running between South Africa and Calcutta that the percentage of ash in Enyati coal is 15 whereas the percentage in Indian coal is from 28 to 30: the Indian coal to which he refers was bunkered in Calcutta. One of the chief objections to Indian coal is that it contains a tremendous amount of clinker, whereas though Natal coal gives ash, it does not clinker largely. I may add that any Calcutta coal that I have seen here for some years past contains a great deal of stone-band and naturally trimmers object to this. A great deal of this coal has been so called Dishergarh. We have taken supplies from Messrs. MacNeil's Equitable Co., Messrs. H. V. Low, and Messrs. Bird & Co., among others at various times.

Certification of coal.—In my opinion it would be a very sound idea to insist on certificates for export coal. So far we have not had certificates, at any rate not as a general system, though we may have had certificates for individual consignments. From Natal we do not get any certificate showing the calorific value of the coal or the percentage of carbon. All

that we get is the note on the bill of lading that the coal is Burnside St. George's or whatever it may be. In our case the London office purchases the coal and merely advises us of their consigning it to us. We are not concerned with the actual purchase of coal though we put forward proposals for the consideration of London. It is possible that certificates showing the grade of coal are sent to our London office when they make the purchase. I should say that the prospect of Indian coal recovering the market in Colombo is very small at present, for the reason that every one is using Natal coal and has been since March 1921. They have existing contracts and they do not wish to make any change.

Freights.—We do not arrange freights but my impression is that they are in the region of 18s. per ton from Durban.

Method of payment.—At present with a higher rate of exchange the South African people have the big advantage of the rupee being worth 1s. 6d. In my opinion it might assist us in Colombo if the Indian exporter was prepared, if necessary, to quote in sterling.

Price.—I should think that the Indian exporter would have to put his price down to 10 per cent. below that for Natal coal. I am not at liberty to quote our selling prices. We have recently been offered coal from Calcutta at Rs. 17-8-0, c.i.f. per ton, on the basis of Rs. 6 per ton freight: it was described merely as "first class coal." It is possible that our home firm might think it worth while going back to Indian coal if they were assured of its being of good quality. My own view is that we have not been getting good Indian coal in Colombo. I have not seen any Indian coal here as good as the Natal coal that we have been getting.

We tried some Transvaal coal at the time when control was in force in Colombo, when cargoes were being pooled and distributed among importers. Personally I do not think much of it. Similarly we had experience of Japanese coal, *e.g.*, Miike Washed Nuts. It was good but very expensive. We also had some Australian coal. It is always an uncertain matter getting cargoes up from Australia owing to their labour difficulties. The few cargoes that we got turned out very expensive. Of course with all these coals there are good and bad consignments just as with Natal coal, but we personally do not import bad Natal coal.

I fear it will be absolutely impossible to restore Indian coal to its old predominant position in the Colombo market because of the competition of oil fuel. In fact, in the port of Colombo oil fuel has affected coal very seriously. It is not a very expensive matter to transform a ship from coal burning to oil burning, although the work cannot be done in Colombo. The general tendency now-a-days is to build ships so as to burn either coal or oil.

I may mention that almost all the Indian coal imported into Colombo this year was brought down by Messrs. Mackinnon, Mackenzie & Co., with the exception of coal for railways which I need not consider because it is brought in on a fixed contract.

Quantity handled.—Roughly I should think that the increasing popularity of oil fuel has affected firms' bunker deliveries to the extent of some 50 per cent. and possibly more in some instances.

Honourable Mr. W. T. SOUTHORN, Principal Collector of Customs, Colombo.

(*Oral evidence—December 16, 1924.*)

I am afraid that I cannot assist very much save by putting in statistics of coal imports and list of charges on coal brought into Colombo.

Charges at Colombo.—The only charge levied on the coal itself is the import harbour dues of 25 cents. per ton which is paid into the general VOL. II.

revenue of the colony; harbour dues were originally imposed to pay for the construction of the breakwater.

Tonnage dues are dues paid by the ship on cargo brought in or taken out; on coal the dues, of 25 cents. a ton, are paid only on inward cargo. These dues also go into general revenue.

Then there are the port dues which every ship pays that comes into harbour.

Lastly we derive rents from the ground on which the coal is stacked—at the rate of Rs. 8,000 to Rs. 10,000 per acre per annum.

The port authorities actually handle none of the coal imported; that is done by wharfage companies.

Liquid fuel.—Statements showing the amount of liquid fuel and coal bunkered may be of interest to the Committee. The great increase in the number of oil burning vessels this year is notable: there can be no doubt that the competition of oil has had an effect on the use of coal. Most of the liquid fuel imported is used for bunkering, but a little is taken by tea and rubber estates. We estimate total imports this year at 170,000 tons of liquid fuel. That there has not been an actual fall in the amount of coal bunkered is due to the general improvement in shipping.

Two tons of liquid fuel are considered to be equal to three of coal: there is the point to be remembered that ships burning coal practically had to bunker here but when burning oil can go longer distances without rebunkering.

Mechanical appliances.—The question of installing mechanical appliances for handling coal has often come up: the decision has always been against it, because labour here is comparatively cheap and ships do not lie alongside the wharf but unload into barges.



Imports of Coal into Colombo, 1910-1923 and 11 months of 1924.

Countries.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924 Jan.-Nov.
A. By Private Firms.															
United Kingdom	330,623	261,289	278,166	234,234	262,054	57,323	39,226	17,117	187	2,104	6,165	123,568	240,516	166,968	172,533
British Colonies—															
British India	448,583	395,478	552,928	364,020	204,575	151,002	446,437	227,261	71,614	198,606	640,742	201,479	14,242	39,756	70,057
Natal	5,302	2,563	9,467	21,370	42,406	45,175	5,812	11,120	88,423	53,097	18,866	193,461	196,044	160,299	201,865
Cape Colony									1,850	7,668	3,762	12,546	6,400	16,473	7,000
New South Wales						21,616		1,654	1,132	10,423				(Australia).	
South Australia															
Western Australia			7,141							1,177	3,158	15,610			
Queensland			2,442						45,150	42,940	16,576	54,134	35,056	29,039	71,160
Other British Possessions in Africa.															
Victoria				602											
Foreign Countries—															
Japan	7,871	520	32,017	94,317	103,410	17,516	13,776	8,201	16,537	23,402	8,023	28,313	5,315	80	
Mozambique		5,707		7,139	6,813		20,574	16,555	8,166	43,258	6,976		25,927	31,373	7,417
China						164									
Cooling-China							1,650	5,017							
Other Foreign Countries in Africa.															
TOTAL	801,379	665,017	885,661	744,529	568,957	611,586	575,677	311,936	218,760	683,077	705,193	616,951	523,100	437,988	550,032
B. By Government.															
United Kingdom															
British Colonies—															
British India	78,989	79,617	72,143	52,493	72,638	87,497	126,367	84,351	55,505	50,045	103,948	74,414	58,616	91,458	84,125
Natal				43,219	34,840									15,002	16,171
Strait Settlements															30
TOTAL	78,989	79,617	72,143	95,412	107,478	87,497	120,367	84,351	55,505	50,045	103,948	74,414	58,616	106,460	100,336

Charges on Coal.

Import Harbour dues, 25 cents per ton of coal.

Tonnage dues (i.e., dues payable by ships discharging cargo), 25 cents per ton of cargo.

Coal st. king grounds adjoining the Harbour are leased to Coal Importing Companies at a rental of Rs. 8,000 to Rs. 10,000 per acre per annum.

E. R WALDOCK, Esq., of Messrs. Delmege Forsyth and Company, Colombo.

(Oral evidence—December 16th, 1924.)

We are a limited liability company registered in Ceylon. Our business is that of general merchants. We have a great deal of coaling and we are agents for the Asiatic Petroleum Co. We import coal on our own account both for bunkering and for local consumption, and our house is one of the biggest coal firms in Colombo.

We are agents for Birds and Heilgers in Indian coal, but we are not buying any from them at present. During the war we had to use Indian coal because we could obtain nothing else: after the war coal of very inferior quality continued to be sent down and shipping firms became prejudiced against it. Then the Indian Government stopped all exports from India and gave us only three months in which to make other arrangements. After the war, there was a control system in force in Colombo under which only a certain percentage was allowed to each importing firm.

Certification.—As a remedy for bad quality, I should say that a colliery certificate of quality would be desirable, if it showed the seam from which the coal was supposed to have come. In recent years, undoubtedly, we have been getting down mixed lots of coal. It was before my time, but I think that my firm was the first in Colombo to import any Indian coal: they then made a great point of handling only the very best Dishergarh coal, but they did not get this quality during the war or afterwards. I certainly favour a guarantee.

Comparative merits.—The general average of Indian coal is supposed to work out at 10 per cent. less in calorific value than the best Natal. It was the same before the war also. During the war and immediately after it, the average calorific value of the Indian coal imported was far less than the figure which I have given. I do not say that India does not produce coal in certain lines or in certain seams that is as good as Natal: but I do say that we have not seen any such coal in Colombo. Generally speaking, we may take the value of Indian coal as 10 per cent. less than Natal coal. The other coals that we handle are Welsh on which I need not comment, and Witbank in which we do a big business; it is only slightly inferior to Natal. During the war, we had a share in one or two cargoes of Australian coal which under the system then in force were divided up among various importing firms. But I should not like to give an opinion on its merits as we handled too little for me to judge it by. None of these coals except African is a serious rival here to Indian. We pay for African coal in sterling: so the recent rise in exchange has helped it very greatly.

The quality of Natal and Witbank coal is very uniform. Natal coal is supposed to be liable to fire, but Witbank is not. We have had fires in Natal coal when we were compelled to stack it very high owing to pressure of space. But if the stack is not more than 10 feet high there is no risk of fire.

Prospects of Indian coal in Colombo.—The price of Natal coal during this year has been approximately 30 shillings c.i.f. Colombo.

To get in against South African coal Indian coal would have to sell at Rs. 18 or less per ton.

It would make no difference if Indian firms quoted their coal in sterling. We as suppliers to shipping firms are always prepared to quote in sterling, and, as regards the risk of exchange, we are quite prepared to take that ourselves.

I do not mind what coal I handle so long as it gives a profit. But Indian coal recently has dropped out of contracts. For example, in the contracts which we are fixing up for next year, the word "Indian" does not appear at all. This is of practical importance, because we are bound to give our purchasers the coal specified in the contract unless they allow us to supply an alternative. However, there is some hope for Indian coal still if you cannot

only guarantee the quality but maintain the quality. Our bunker contracts are all made in England: but if India shows that it is determined to do something, we shall point out the fact to our Home firms. Until a definite proof is forthcoming that the quality of Indian coal is to be improved, we can of course do nothing towards its sale.

Stacking.—(To Mr. Legge.)—There is no advantage at all in stacking coal under cover. We do not keep any of our coal in sheds. We used to use sheds but when the roofs rotted, we did not renew them. The important point is to keep the stocks moving: the coal does not deteriorate if kept for only six months. The P. & O. Co. keep their coal under sheds and Admiralty coal is kept in the same way; otherwise sheds are not used to any great extent in Colombo.

Coke.—We have got a certain amount of coke from Calcutta for foundry work. But the demand is very small—100 tons a month. We have had no complaints about quality. There is occasionally a shortage on weights, but Messrs. Mackinnon, Mackenzie & Co., from whom we procure our coke, guarantee their shipments, so that we do not suffer by any shortage. It is a common thing when importing coke to find a shortage in weight. We have only been two years in this line. Before we started supplying Government, I think, Messrs. Delmege Reid used to supply them coke from Natal. Our coke is carefully tested and samples are submitted to the Foundry Engineer.

Tar.—Tar is imported on behalf of Government. It is difficult to get hold of enough of it in India. We obtain supplies from Birds'. The demand is mostly from Government who advertise their requirements so that every one in India has a chance of quoting.

(c) PENANG.

Mr. J. DICK, Messrs. Islay Kerr & Co., Penang.

(Extract from letter of 20th November 1924.)

I do not think any good would arise from meeting representatives of firms here interested in coal as I have seen the two important firms and they say the coal business at this port is to all intents dead now-a-days and that when any part cargoes are arranged it is done through their Head Offices in Singapore.

Years ago there was a fair coal business done here, the principal users being the tin mines and the F. M. S. Railways but now that the Malayan Collieries (a colliery in the F. M. S.) supply their wants the demand for coal here is exceedingly small.

I remember occasions years ago when the stocks of coal here were 100,000 tons and over but to show the present position I give below the stocks coal and coke in hand for sale on the 1st November.

	Tons.	Cwt.
Natal Burnside coal	523	04
Fushum Lump coal	63	04
Coke	214	18
	801	06

Deliveries during October from stack were as follows:—

	Tons.	Cwt.
Natal Burnside coal	122	01
Fushum Lump coal	287	00
Coke	114	18
	523	19

The only users of coal of any account at this port are The Straits Trading Co., Ltd., The Eastern Smelting Co., Ltd., and The Straits Steamship Co., Ltd. The two first Companies mentioned prefer such coal as Anthracite dust for use in their smelting furnaces and they usually arrange their own shipments but their requirements are not large now-a-days as they use oil fuel principally in their works. The Straits Steamship Co., Ltd., require bunker coal for their small vessels which make Penang their terminal port but their requirements are not sufficient to warrant chartering a full cargo; so they usually arrange for a steamer discharging coal in Singapore to proceed to Penang and land a portion of her cargo here which they send to their dockyard and draw on as required. The stocks of coal held by these three firms are not included in the above stocks in hand as at the 1st November.

**Mr. T. A. POWELL, Messrs. Adamson Gilfillan & Co., Ltd.,
Penang.**

(Extract from letter of 20th December 1924.)

From enquiries I have made I find that tin mines situated in the "ulu," i.e., jungle, are in the habit of using firewood and so far have not found any difficulty in obtaining their supplies; the price works out at Straits \$4.14 (Rs. 9-8) per ton of 50 cubic feet. Those mines which are near to a railway use either wood or Rawang coal from the Malayan collieries, according to which happens from market circumstances to be the cheapest; I am told that the latter can be delivered to any railway station in the state of Perak at a price not exceeding Straits \$6.00 (Rs. 14) per ton of 20 cwt. In writing the above I am referring only to the mines which formerly drew their fuel requirements ex-stocks of coal held at Penang.

As regards coke, the business appears to be a small one so far as Penang is concerned; stocks lying at the Prai Wharves during the past eight months have never exceeded 350 tons, while deliveries over the same period have averaged 110 tons monthly. Present prices vary from \$32.00 for Natal to \$41.00 per ton for English ex-stack Prai which I make equivalent to approximately Rs. 67 and Rs. 88-6 c.i.f., respectively.

(d) SINGAPORE.

CHAMBER OF COMMERCE.

The Committee of the Singapore Chamber of Commerce referred the questionnaire to their Shipping Sub-Committee which consists of the following:—

Mr. F. Walker	P. & O. Co. (absent on leave),
Mr. C. E. Wurtzburg (Chairman)	Mansfield & Co., Ltd.,
Mr. S. L. Thompson	Boustead & Co., Ltd.,
Mr. L. W. Learmount	Paterson, Simons & Co., Ltd.,

and the Shipping Sub-Committee invited the attendance of the following representatives of firms interested in coal:—

Mr. A. McE. Marshall	McAlister & Co., Ltd.
Mr. E. C. H. Charlwood	Adamson, Gilfillan & Co., Ltd.
Mr. W. I. L. Legg	Mansfield & Co., Ltd.
	(Straits Steamship Co., Ltd.)

They then submitted the following written statement.

[*Note.*—Other firms in Singapore interested in coal are:—

Asiatic Petroleum Co.	. . . . .	Australia.
W. R. Loxley	. . . . .	Dutch Borneo Coal.
Hooglandt & Co.	. . . . .	Dutch Borneo Coal.
Mitsui Bussan Kaisha	. . . . .	Japanese & Chinese Coal.
Mitsubishi Shoji Kaisha	. . . . .	Japanese & Chinese Coal.
P. & O. Co.	. . . . .	S. African & U. K. Coal.
Borneo Co., Ltd.	. . . . .	Previously interested in Indian coal.]

18. Comparative merits.—General opinion of consumers is to the effect that the Indian coal up till now placed on the Singapore market does not compare favourably with good Japanese, South African or best Sumatra coal. The class of Indian coal imported is about equal to Borneo coal. There are, we believe, good Indian coals, but experience seems to show that since pre-war period these have not been exported and even taking pre-war standards, best Japanese and best Australian were both superior to best Indian according to general opinion locally. Of recent years South African coal has been found highly satisfactory and reliable and is now an important factor in the Straits coal market.

20. Prices.—See attached statistics (Annexure III). The average current prices c.i.f. (in shillings) are to day:—

	s.	d.		s.	d.
Natal Navigation	27	0	to	28	0
Witbank	25	6	to	26	6
Milke (or best Japan)	27	0	to	28	0
Fushum	25	0	to	26	0
Sakito other 2nd grade coals	30	0			
Best Sumatra	30	0			
Borneo and inferior D. E. I. coal (coasting steamers)	22	0	to	25	0

21. How competition can be met.—By supplying good coal at a cut price and maintaining quality thereafter. When a footing is obtained price might be raised but quality must never be lowered.

It is not by any means certain that even then shipowners would be willing to use Indian coal except as a lever to keep down prices of competing coals, as other coals have justly obtained a good market here.

The question of exchange as regards Rupees, Yens or Guilders against Sterling price of South African coal should be borne in mind. One suggestion has been made that Sterling prices from India would facilitate the sale of Indian coal.

A great handicap in purchasing coal from India is the custom of paying for coal at time of shipment with no reduction, whereas competing descriptions can be paid for on delivery with the added advantage of paying freight on bill of lading quantity less 2 per cent. in lieu of weighing.

23. Special assistance to other coals competing with Indian.—There are no such aids to coal importers in the Straits within our knowledge.

Inspection and Certification.

24. Grading of coal.—We do not attach any value to this—the correct naming of coal according to mine is quite sufficient. A pit certificate on the other hand is desirable.

31. Sale on analysis.—No importance is attached by consumer to such certificates.

General.—Statistics are attached showing:—

- (a) Comparative table of coal imports for the last five years.
- (b) Comparative table of c.i.f. coal prices for four years, 1920-1923, compiled from the records of Messrs. Boustead & Co., Ltd., McAlister & Co., Ltd., and Paterson, Simons & Co., Ltd.

In conclusion we would make the following observations :—

- (1) There is a considerable prejudice here in the minds of consumers against Indian coal, which will be hard to overcome.
- (2) African coal, owing to its uniformly good quality, has since the war become well established here and would prove a very strong competitor.
- (3) Low grade coal formerly imported by F. M. S. Railways is now supplied from Malayan sources. It would be difficult to compete with such local coal.
- (4) Tin Mines were regular consumers of Indian coal before the war period, but generally speaking, firewood has taken the place of coal except in areas in the vicinity of the Rawang Coal Mines. If prices fell sufficiently we have no doubt there would again be a market for cheap quality coals.
- (5) It would, in our opinion, therefore be necessary for Indian exporters to be prepared to sell coal at a loss for some considerable period, to export "for the bunkering trade" only good coal of definite and well-known brands and to bring methods of payment into line with those of their competitors, in order to recover any considerable share of the local coal sales.

Whether such efforts on the part of Indian exporters would not immediately be countered by their competitors is open to speculation.

ANNEXURE I.

Coal imported into the Straits Settlements.

	Tons.					
	1918.	1919.	1920.	1921.	1922.	1923.
<i>A. British Empire and Protectorates.</i>						
United Kingdom	4,601	693	151	10,384	90,583	31,888
British North Borneo . . .	8,637	3,390	..	5,278	18,921	..
Brunei	13,509	10,178	13,084	..	7,213	6,439
Sarawak	5,012	3,653	1,716	3,249	..	1,800
British India and Burma . .	19,482	87,066	188,432	12,493	..	21,984
Hongkong	500	56	281	959	2,125	3,169
F. M. S. . . . .	..	..	..	..	..	32,741
Non-F. M. S. . . . .	..	..	..	..	..	..
Australia	8,074	61,543	138,472	92,941	67,277	34,965
Union of South Africa . . .	12,930	34,634	5,817	11,656	76,501	153,897
Other British Possessions . .	..	4	..	112	..	..
<i>B. Foreign Countries.</i>						
China	21,694	..	340	26,245	14,652	15,154
French Indo-China	11,424	12,777	12,742	9,831	14,955	10,204
Japan	334,844	271,326	341,195	340,007	226,646	176,692
Dutch Borneo	7,236	12,316	21,281	17,117	17,336	68,101
Sumatra	8,730	2,385	3,680	3,091	11,158	60,104
Siam and Siamese States . .	..	..	..	..	..	..
Other Foreign Countries . .	207	20	10	..	..	14,704
TOTAL	457,480	503,04	728,701	533,343	547,967	633,752

ANNEXURE II.

Coal imported into the Straits Settlements for the first half of 1924.

A. BRITISH EMPIRE AND PROTECTORATES.

	Tons.
United Kingdom	7,516
British North Borneo	8,877
British India and Burma	6,955
Hongkong	271
F. M. S.	2,141
Non-F. M. S.	25
Australia	87,875
Union of South Africa	120,063
Other British Possessions . . . . .	...

B. FOREIGN COUNTRIES.

China	84,521
French Indo-China	420
Japan	38,215
Dutch Borneo	40,067
Sumatra	24,449
Other Foreign Countries	17,875


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TOTAL .	334,270
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ANNEXURE III.

C.i.f. Prices of Imported Coals.

	1920.				1921.				1922.				1923.			
	Indian.		Japanese.		Indian.	Japanese.		Chinese.	Japanese.	Natal.	South African.	Chinese.	Japanese.	Natal.	South African.	Chinese.
	\$	No. 1.	\$	No. 2.		\$	No. 1.									
January . . .	31½	..	38	..	..	38	..	..	..	..	..	..	..	12½	..	..
February . . .	35	..	32½	..	34	..	..	16½	..	..	..	16½	..	..	11½	..
March . . .	39	..	..	..	25	..	..	..	..	..	15	..	..	12½	..	18½
April . . .	32	44	..	..	22	..	..	..	15½	..	..	..	13	12½	..	..
May . . .	37	..	..	..	21½	..	..	..	15½	..	..	..	..	12½	..	12
June . . .	35	..	..	20½	..	23½	20½	..	15½	..	13½	..	..	12½	11½	..
July . . .	35½	..	..	20½	..	20½	..	21½	..	..	..	..	..	..	11-00	..
August . . .	35	43	..	..	..	..	..	..	14½	..	..	..	..	..	12	..
September . . .	33	..	..	..	..	..	..	15	..	..	..	..	..	13	12	12-25
October . . .	28	..	..	..	20	..	..	..	..	13	..	..	12½	..	11-00	..
November . . .	28	..	..	..	..	..	..	..	13½	..	..	..	12	13	..	..
December . . .	28	..	..	14½	..	..	..	..	13½	..	..	..	..	..	12	..

Discussion with the Singapore Chamber of Commerce Sub-Committee, December 4th and 5th, 1924.

PRESENT :

Mr. C. E. Wurtzburg (Chairman); Mr. S. L. Thompson; Mr. L. W. Learmount; Mr. A. McE. Marshall; Mr. E. C. H. Charlwood; and Mr. W. I. L. Legg.

Recent experience of Indian coal in Singapore.—In reply to a query as to the firms in Singapore which had recently had experience of Indian coal *Mr. Learmount* stated that he was the only person present who had actually handled a cargo of Indian coal of late. That was a consignment of 11,000 tons Dishergarh coal from Messrs. Andrew Yule & Co. It was however impossible to base any comparison with other coals on the results of this consignment, as it caught fire on ship, and though the physical damage was estimated at only 1 per cent. it was difficult to judge how far the coal was really affected. There was the possibility that it had been damaged by the water used to put out the fire, and purchasers had complained that when they wanted full power they could not get it with this coal: but this might have been due to its having been heated. The consignment had arrived when stocks were very short and it would have sold readily in the ordinary course, but because of the fire most of it was still there.

Mr. Marshall added that a consignment of coal sent down from Calcutta by Sarda since the prohibition was raised sold at a very poor price in small parcels. It was consigned to an Indian who started by asking an exorbitant price and then wanted offers but would not commit himself to any definite figure. It was so-called Admiralty.

Prices of Indian coal in Singapore.—As regards prevailing prices of Indian coal *Mr. Learmount* said that the last quotation for Indian coal was for Dishergarh \$12 a ton c.i.f. equivalent to 27s. 4d. Andrew Yule had telegraphed offering Dishergarh better than Natal at Rs. 18 and equal to Natal at Rs. 17. As to comparative merits, *Mr. Learmount* personally held that no Indian coal was better than Natal coal: he based his opinion on the prices which people were willing to pay: Natal coal always got a premium over Indian. In Singapore this might be due to bad qualities only of Indian coal coming on the market but this argument would not apply elsewhere: and the preference for Natal coal was general.

Indian compared with competing coals.—Asked whether the meeting could classify the coals of which prices were given in the written reply to question 6 (b) in any order of merit, *Mr. Marshall* pointed out that this was a difficult matter: probably everyone present had his own ideas as to the merits of different coals, based on his personal experience: and they would prefer not to attempt to decide on a scale of merit. He could however say with confidence that no one would classify Indian coal as the worst of which they had experience in Singapore. Some coals from Borneo were worse. A point which he wished to emphasize in this connection was that during his experience of ten years he had never been able to buy a cargo of Dishergarh coal or Jharia coal: what he obtained was always a mixture. It was described as Admiralty Standard but there was no sort of uniformity about it: in one consignment they would get excellent coal from hatches one and two, and the people using it would ask for more; then when they came to number four hatch they would find the coal downright bad—obviously because mixing had not been properly done. He would add that he had never been able to get a cargo of coal from a definite mine. In the last ten years any coal imported was always "Admiralty Standard", not coal from a definite colliery—with the one exception of Paterson Simons' consignment, already referred to in the discussion, which came from Dishergarh. For this reason it was unfair to compare Indian coal with South African.

The variation in the quality of the "Admiralty Standard" was not due to his purchasing from different firms in India: it was the same firm: they had replied to complaints by saying that they had to take what Government gave them. He was referring particularly to the years 1920 and 1921. He would invite the Coal Committee's particular attention to the statement of the c.i.f. prices of imported coals, attached to the sub-committee's written reply to the questionnaire. It would show that in every month of 1920 Indian coal was imported into Singapore: and the only other coal imported was Japanese in April and August.

Mr. Thompson commented that the statement did not cover imports for the steamship lines: it dealt with merchants' coal only.

Mr. Marshall agreed: imports by Blue Funnel, B.I. and P. & O. had been deliberately excluded because they would be misleading for the present inquiry. In contrast with 1920 Indian coal in 1921 was imported only in February. It was at the end of December 1920 that the prohibition of exports of coal from India had been imposed. But this was not the sole reason why imports of coal from India should have ceased. They would have been affected anyhow by the pronounced drop in Japanese prices: the two factors synchronized. The prohibition of export was the original cause. The permission to import the consignment in February of 1921 was a concession: the consignment was to Paterson Simons though there was some discussion at the time whether it should not be distributed *pro rata* to the three firms which had contracts for Indian coal outstanding. As to the reason for the fall in Japanese prices in 1921, exchange had a lot to do with it, in his opinion. There was the further reason that the Japanese made a deliberate attempt to keep out South Africa which was then beginning to nibble at the Singapore market: the Japanese had a strong hold on the Singapore market at that time and were likely to be able to keep it unless South Africa cut prices. *Mr. Charlwood* considered that another and very important cause was the slump in trade accompanied with a slump in freights. *Mr. Marshall* doubted the importance of this because it would have affected Natal coal also. *Mr. Charlwood* pointed out that the general slump set free cargo space all over the world, but *Mr. Marshall* commented on this that the South Africans were already forcing their way in.

Grading of Indian coal.—The question of the comparative quality of Indian and other coals was then raised. *Mr. Marshall* stated that when they got a cargo of Natal coal they could be certain of uniformity: the reason was that the cargo would always be from the one group, not from several: but as he had previously remarked, they had never been able to try this with Indian coal. At this stage it was explained by the members of the Indian Coal Committee that there was obviously a misunderstanding about the names given to different kinds of Indian coals. Neither Dishergarh nor Jharia represented a particular mine: the former was the name of a seam on the Raniganj coalfield, and the latter the name of the largest coalfield in India. The fact that a consignment of coal came from a particular mine would not necessarily mean that it was of uniform quality. Some Indian collieries worked three or four seams varying in quality. It was the seam, not the colliery or mine only, that must be the criterion of quality, and even individual seams varied. *The President* asked whether in view of these facts the sub-committee would adhere to its opinion against grading and certification. *Mr. Marshall* remarked that certainly they had not known that the quality of the coal from an Indian mine was not consistent. *Mr. Thompson* explained in this connection what was meant by a "pit certificate": it gave the name of the colliery from which the coal came and that was equivalent to a certificate of definite quality. *Mr. Charlwood* said that he would add, "if coupled with the name of a reliable exporter."

Mr. Wurtzburg said that he understood the certificate suggested was one showing what coal was actually being sold: that was all right, but they were afraid in Singapore that the result would be to enable a seller, when complaints came in about his coal, to protect himself by producing a Govern-

ment certificate that the coal was up to standard. He would be in favour of grading if it merely meant seeing that the coal was of uniform quality.

Mr. Bell thought that the important point was the difference between South African and Indian coal generally. *St. George's* for example meant a coal from a specific colliery and of a uniform quality: and *Burnside* meant coal from a group of collieries to which the same remark applied. But with Indian coal the only guide was the seam number—at any rate for *Jharia* coals: on the other big field, the *Raniganj* field, the seams were so broken up that more particular descriptions were needed. *Mr. Wurtzburg* said that in that case people would be in favour of grading: the certificate might also show the mine and the quality of the coal.

Mr. Learmount explained that if cargoes of Indian coal came into Singapore and were approved, certificates on subsequent consignments showing that they came from the same seam as the first approved consignment would be useful. But they wanted to do business direct with the selling firm and not to have it sheltering itself behind a Government official certificate. *Mr. Wurtzburg* amplified this by saying that they wanted to fix their own standards after ascertaining whether they could sell a particular coal and what ships' masters thought of it. When they had fixed these standards they would like to be certain of getting precisely the standard of coal which they wanted on any particular occasion. What they did not want was the kind of certificate which says that a coal is equal to Welsh steam coal or anything of that kind.

Mr. Bray asked whether it would suit them if a certificate on a consignment said "first-class *Jharia*" or "first-class *Dishergarh*" and if they could be sure, should that quality suit them, that other shipments with that certificate would be the same. *Mr. Learmount* remarked that what they wanted to avoid was having a coal, say, selected *Jharia*, certified merely as "first grade" Indian coal and then to have another coal, say, "*Dishergarh*", which was imported by some other firm, similarly certified as first grade.

Mr. Marshall said that the liability of some coals to fire was an important point. In Singapore from December to February was their wet season but all through the year the climate was moist, and spontaneous combustion was a very real danger: they wanted to have nothing to do with coals liable to it.

The President referred to the suggestions *re* grading advanced in the Indian Mining Association's reply to the questionnaire, saying that they would show the lines on which grading might be possible, though it should be understood that the Committee had not yet considered them.

Certificates of quality.—*Mr. Marshall* stated that Japanese coal, though covered by certificates, was often not good.

Mr. Wurtzburg repeated that the most important thing was not to have a type of certificate which would protect the sellers at the expense of the buyers. *Mr. Learmount* supported this: in the past certificates had been to the effect that coal was of such and such a quality—Admiralty Standard usually—not that it was of the definite quality previously approved. He did not even know what Admiralty Standard was. (*Mr. Bell* said that practically speaking it had meant anything which would burn in the furnaces of vessels commandeered by Government during the war: it was not an exact definition of any quality.) It would in his opinion be more satisfactory if his Calcutta friends offered such and such a quality, not such and such a quality by Government standard. The merchant's word was wanted, and not a reference to outside opinion.

Mr. Marshall expressed the opinion that the certificate described by *Mr. Bray* would be a greater safeguard. *Mr. Learmount* enquired who would pass the coal after grades had been agreed upon, what individual would look at the coal?

The President explained that the point had not yet been definitely discussed: it might be the Chief Mining Engineer.

Mr. Wurtzburg said that what they feared was the possibility of someone being in a position to take a little *baksheesh* for passing coal off on them as of a standard which it was not.

There followed some discussion on this point which ended in the general opinion definitely so expressed by the Singapore representatives that on the whole the proposed system would meet requirements if inspections were done satisfactorily by European inspectors.

Certificates for African coal.—To an inquiry whether a system of certifying South African coal as of a specific grade was actually in force, Messrs. Thompson, Marshall and Learmount said that they got certificates with South African imports. The two first said railway certificates only, but the third said that he got pit certificates for Burnside and St. George, Natal coals. He went on to differentiate between Natal and Transvaal coals: there was no certainty as to the quality of Witbank coal: Natal coals came from definite pits: Witbank was a district and coal so named might be anything: you would have one good cargo of it and then a bad one. There was a system of pooling in vogue as regards Witbank coal and all of it was sold through certain selling agents, but something definite must have been done recently *re* grading, for in the last six months cargoes of this coal had been uniformly good. Messrs. Marshall and Charwood corroborated this: the former said that at first quality was not constant, but certainly during the last six months there had been no complaints: in fact one or two engineers had expressed the opinion that Witbank was equal to Natal Navigation which usually fetched one or two shillings more. Mr. Learmount thought that the quality had been improved by using a larger mesh on the screens: he had received information that Witbank was now being screened on a $\frac{3}{4}$ -inch mesh. He asked what was the standard for Bengal screens. Mr. Bray replied that almost all Bengal coal was hand picked and hand loaded, so that this point did not arise. Mr. Marshall said that the Australians used a $\frac{3}{4}$ -inch mesh and asked if the Indian coal sent previously to Singapore was a through and through coal, *i.e.*, loaded as it came out of the pit, or screened. Some discussion followed from which it appeared that importance was attached to screening.

Methods of payment and allowance *re* weight.—Mr. Thompson stated that Singapore always bought on long tons of 2,240 lbs. The discussion then shifted to the question of paying for coal at the time of shipment, which the written reply to question 6 (c) quoted as a handicap to Indian coal. Mr. Marshall said that firms in Calcutta refused to sell except for cash against documents in Calcutta at time of shipment, surveyors' quantities at Calcutta without any allowances. As to surveyors' quantities, the ship's draft might or might not be correct. The price included freight: it was c.i.f. With other coals on the contrary there were allowances,—with some 2 per cent. of the price of the coal, and with Natal coal 2 per cent. of the freight. The South African dealer sold c.i.f., and then chartered a steamer: he sent to Singapore a copy of the Charter party, which stated rate of freight, and of the bill of lading which might or might not state it: if the Singapore buyer before commencement of discharge accepted the cargo on the bill of lading figure less 2 per cent. on freight in lieu of weighing, then the allowance was given. To take an imaginary instance:—

	£
(1) 7,000 tons at 30s. a ton c.i.f.	10,500
(2) Freight at 20s. a ton by Charter party	7,000
(3) 2 per cent. of 7,000	140
(4) The buyer paid	10,360

Certain Japanese collieries gave 2 per cent. off the c.i.f. price of the coal but taking everything in he could not say that this was really better than the Natal allowance.

Mr. Learmount pointed out that the buyer of Natal coal had the option of paying freight on delivered weights or taking a 2 per cent. deduction

off the freight on accepted weights. *Mr. Marshall* added that an extra in most South African charters was $1\frac{1}{4}$ per cent. off the balance of the freight: for instance, to take the previous illustration:—

	£	s.
(1) 7,000 tons coal at 30s.	10,500	0
(2) Out of this freight amounted to	7,000	0
(3) The 2 per cent. allowance was	140	0
(4) The balance of the freight was then	6,860	0
(5) Disbursements amounted to, say	1,860	0
(6) Leaving a balance of	5,000	0
(7) $1\frac{1}{4}$ per cent. on which would be	62	10
(8) Leaving to be paid	4,937	10
(9) And the buyer paid	10,297	10

£8,437-10 would be cabled home to London, £1,860-0 would be disbursed in Singapore, and the result would be that the purchaser would be £62-10 better off.

Mr. Bray asked why the 2 per cent. was allowed on the freight and not on the f.o.b. price of the coal as well. *Mr. Marshall* replied that it was because the coal was weighed as it passed over the weighbridge into the hatches: dust flew out of it as it was loaded, and again at Singapore when it was unloaded into baskets and tipped by coolies: some coal was obviously lost after it was weighed at the time of loading, and the ship's owner took off 2 per cent. for this. The reason the allowance was only on the freight was that the buyers had failed so far to obtain better terms.

Mr. Bray asked if it would not be more satisfactory if coal were sold on f.o.b. weights less 2 per cent. *Mr. Learmount* said Australia allowed only 1 per cent. on the freight. *Mr. Marshall* said 2 per cent. but they would not give it on f.o.b. price. As to Natal coal *Mr. Charlwood* and *Mr. Marshall* agreed that they paid on the full quantity of coal shipped less 2 per cent. on the freight.

Mr. Bell suggested that the reason for the practice was that it was cheaper to the shipowner to allow 2 per cent. off the freight than to delay the ships while the coal was being weighed. *Mr. Marshall* disagreed, because they sold on weight in Singapore: though they accepted the shipping weights for the purpose of getting the 2 per cent. allowance, they weighed none the less, at their own cost, for their own satisfaction. *Mr. Learmount* remarked that it did not delay the ship appreciably: they weighed one basket in ten—a delay of $\frac{1}{4}$ hour on the day perhaps.

Mr. Bray asked if they would consider it satisfactory if they could buy Indian coal on bill of lading quantity, based on surveyor's weights, less 2 per cent. *Mr. Learmount* had no belief in surveyors' weights. *Mr. Thompson* instanced a consignment which was shown by the surveyor as 750 tons but by weight as 1,200. He asked if the trucks could not be run over a weighbridge as the coal was loaded at the docks at Calcutta. *Mr. Learmount* instanced a cargo from which against a bill of lading quantity of 852 tons there was an outturn of 1,025 leaving an excess of 173 tons.

Mr. Marshall said the difference could not be ascribed to their method of weighing, for it was not an invariable thing to get a surplus.

Mr. Bray asked if they paid on the bill of lading in such cases or on the actuals shown by weighing. *Mr. Learmount* said on bill of lading: the surplus was a profit to them. One source of the error was the surveyor's allowance for stores: the master often had a very hazy idea what they weighed. *Mr. Bell* said that this would not account for more than 20 tons on an ordinary tramp steamer. *Mr. Learmount* would have put it as high as 140, perhaps including fresh water.

Consumption by (1) ocean-going and (2) coasting steamers and (3) other consumers.—The proportion of total imports taken by (1) ocean-going steamers, (2) coasting steamers, and (3) other consumers was put by Mr. *Charlwood* on a rough estimate at (1) 60 per cent., (2) 30 per cent., (3) 10 per cent.: Mr. *Learmount* said that he had given Mr. *Read* the figures quoted by him to the Committee in Calcutta, and in giving those figures he had omitted the coal imported by the P. & O. and other companies which never came into the market. He thought that if the P. & O., Blue Funnel and B. I. gave their figures it would be easy to work out proportions. Mr. *W. J. L. Legg* put the quantity of coal used by the Blue Funnel main line ships at 12,000 tons a month. Mr. *Learmount* said that they would give the figures in writing. (*Vide* Mr. *Learmount's* oral evidence, first paragraph).

Stocks in Singapore.—Mr. *Learmount* put stocks at a total of 120,000 tons, and Mr. *Charlwood* at something over 100,000. Mr. *Wurtzburg* mentioned that the P. & O. had their own stocks independent of the Harbour Board stocks, the total of which could be ascertained from the Board. Mr. *Learmount* enumerated other stocks held by various firms outside the Harbour Board's stocks, besides industrial stocks, but Mr. *Charlwood* thought that all these could be treated as having passed into consumption.

Port facilities and costs.—Mr. *Wurtzburg* mentioned that not all the coal imported was handled by the Port authorities. Mr. *Marshall* said a large proportion was not. Mr. *Learmount* referred to the newly established custom of selling *ex* ships, taking full advantage of lay days, which resulted in a consumer getting his coal so much the cheaper.

Mr. *Thompson* explained that the Port charged no coal dues. Mr. *Marshall* added that the merchant paid inward wharfage on steamers discharging coal at the wharf. Steamers bringing coal to Singapore were entitled to cheap charters because they paid no dues.

Mr. *Wurtzburg* said that a steamer discharging in the roads paid nothing in dues to Port authorities. Mr. *Learmount* thought that Indian coal would have to be thus discharged because it could not stand the wharf charges which approximated to \$2.50. Mr. *W. J. L. Legg* gave \$1.50 per ton as the estimated cost of taking delivery *ex* steamer in the Roads, lighting direct and loading into consuming steamers' bunkers. Mr. *Thompson* said that tallying cost 2 cents a ton. Mr. *Learmount* put the total cost at \$2.50 a ton allowing for 3 months' storage at 8 cents a ton per month. When he said Indian coal could not stand this cost, he assumed that the Indian coal imported would be comparable with local coals: if it were of a quality equal to Natal it could stand it. But in his opinion it could compete only with Borneo coals, and therefore it would have to sell *ex* roads. For local consumers Natal coal was of too good a quality: they would not pay the price and used Witbank or local coals. Mr. *Wurtzburg* said that there was now an established prejudice that Indian coal was not so good as South African and Mr. *Marshall* summarised the position as follows: African coal had emerged from a phase through which Indian coal would now have to pass. At one time all coals from South Africa of whatever quality had to sell only as "South African coal" and if one bought a more expensive coal like Natal Navigation or Enyati it fetched a price no higher than ordinary coal: but to-day the various South African coals sold on special names. Similarly, for a time all Indian coals would have to sell merely as Indian coal till the various brands or seams became known. Mr. *Wurtzburg* added that certificates of the kind suggested on the previous day would facilitate passing through this stage. Mr. *Learmount* said that selling coal on a name as the South Africans did would encourage this, and Mr. *Marshall* that it must have cost them a lot of money to get into the Singapore market.

Costs at Singapore were given by Mr. *Learmount* as follows:—

- (1) Wharfage inwards and outwards 40 cents. each way, *i.e.*, on landing and when bunkering—80 cents per ton;
- (2) "Stacking," *i.e.*, handling charges from ship to stack, 56 cents., a fixed charge by the Singapore Harbour Board;

(3) Unstacking, removing and loading 90 cents;

(4) Three months' storage rent at 8 cents a ton per month, 24 cents;

or a total of \$2.50, exclusive of interest and insurance. *Mr. Marshall* including insurance and tallying reckoned the total at \$2.60.

Different methods of delivering coal at Singapore were given by *Mr. Marshall* as being: (1) *ex ship*, (2) *ex private yard*, (3) *ex Paterson Simons' hulk*, and (4) *ex Singapore Harbour Board wharf*. *Mr. Thompson* put the proportions as two-thirds *ex wharf* and one-third from the others. *Mr. Wurtzburg* added that coal was delivered also from the P. & O. wharf but only for that one line. *Mr. Learmount* considered that if Indian coals were delivered on to the wharf it should not break much: coal discharged into lighters *ex ship*, down a shoot, did smash, especially when the lighter was empty. As to the hulk, alongside which the ship goes to bunker, it was started to avoid Harbour Board charges.

Competition of Sabang.—It was agreed by all those present that the consumption of coal for bunkering was less than it used to be. The reason for this was chiefly the competition of Sabang: the tendency to use more oil fuel was a subsidiary reason. *Mr. Learmount* put the date at which the competition of Sabang became effective at about 1910: he remarked that when Indian coal sold largely in Singapore there were very few local coals to compete with it.

Sabang competition.—*Mr. Learmount* said that Sabang had the advantage of handling coal more quickly than Singapore and very cheaply: there were not even pilotage charges. As *Mr. Wurtzburg* remarked, they laid themselves out for bunkering, and docking and repairing. There was nothing else on the island, *Mr. Learmount* continued: he considered the two chief factors in favour of Sabang were the small overhead charges and the mechanical appliances. Of minor importance was the reduction in freight charges, which might amount to a shilling a ton, owing to the saving in cost effected by discharging quickly; they managed up to 1,500 tons a day. He could give no figures as to the quantities handled there: the information was not obtainable. *Mr. Marshall* thought that Sabang would have no prejudice against Indian coal. They took any coal: they had a big business with Natal and they dealt also with the Japanese, Sumatra and Borneo. They used at one time to mix Indian with Sumatra coal. There was only the one company there, the Sabang Bay Harbour and Coal Company, Ltd. *Mr. Learmount* said that Sabang would take Indian coal if shipowners wanted it.

Definite tests of coals were said by *Mr. Wurtzburg* to be made in his firm's home office by their analytical department. *Mr. Marshall* said that locally tests were made by the Straits Trading Company, the Gas Works, Singapore Harbour Board, the Ho Hong Steamship Company (a big Chinese shipping firm) and others.

The liability of South African coal to fire was next discussed. *Mr. Marshall* said that they did have that trouble: personally he had known of South African coal taking fire on a sailing ship, but never on a steamer. *Mr. Learmount* said that on one occasion coal that had taken fire was reported to him as being Natal, but as a certain amount of Australian was in the vessel's bunkers at the time, it was his opinion that the Australian was more likely the cause of the trouble: he knew of no other case.

Comparison with Japanese coal.—*Mr. Marshall* said that it was correct that Japanese coal was like Indian in not being of uniform quality. Some Japanese coal was from the one mine: but besides this there were mixtures and these varied. He instanced Soyeda coal as one of which the mixing was often not satisfactory.

Dutch Borneo and Sumatra coal.—With regard to the considerable imports this year from Dutch Borneo and Sumatra *Mr. Wurtzburg* said that the Sumatra Government collieries had canvassed actively. It was very good coal—suitable for main line steamers. *Mr. Marshall* said that it was the best coal they got in Singapore. *Mr. Learmount* considered that the pro-

duction of locally mined coal was likely to expand: new mines were opening up.

As to Dutch Borneo coal *Mr. Wurtzburg* thought it suitable for small ships, coasters and such like. It had been tried on main line steamers, but he understood that it was too variable and too fast-burning—also it had not a compensating value in cheapness. Coasting steamers would burn anything.

Comparative merits of Indian and other coals.—*Mr. Bell* asked if excluding the very best Indian coal with which Singapore was not acquainted, the other figures as to comparative tests in Rangoon quoted to them by the President were in their opinion correct. *Mr. Learmount* said that he had never heard of any Witbank which could be considered better than any class of Natal coal. But so far as he knew they never got any second class Natal coal in Singapore. As to the superiority of Scotch coal to Natal, as shown in the Rangoon tests, he could only say that he had been told by masters who did load good Scotch coal that the Natal coal with which they had replenished in South Africa was just as good as the Scotch: in the light of this he did not think much value could be attached to the Rangoon opinions. If the tests were not under marine boilers, they were of no value so far as steamers were concerned: for the draught varied greatly in furnaces of marine and stationary boilers. *Mr. Wurtzburg* agreed. *Mr. Thompson* said that for stationary boilers most users preferred Witbank to Natal Navigation: not because of price but because it gave better results. *Mr. Learmount* said that he did not altogether agree, for one firm quoted by *Mr. Thompson* never took Witbank: he could say this from his personal knowledge of what his firm supplied to them. *Mr. Thompson* said that the firm in question bought from different sources for different purposes.

Mr. Bell asked whether, if it were possible to put into Singapore an Indian coal of really good quality, its prospects of selling would be a matter of price. *Mr. Learmount* said that they must recognise the existence of a definite prejudice against Indian coal, and *Mr. Wurtzburg* added this was regardless of price. *Mr. Marshall* said that even if a really good coal were put in it would be a long and hard struggle to overcome that prejudice.

Prejudice against Indian coal.—*Mr. Learmount* said this prejudice was in the mind of the Singapore consumer and of the London shipowner. For example a tramp steamer due within the next few days had been offered Indian coal at six shillings below Natal coal but would not take it. *Mr. Marshall* thought that the London offices must be influenced by local opinion: they would go by the reports sent home. *Mr. Learmount* disagreed considering that if India wanted to get into the Singapore market propaganda in London was essential.

Freight.—*Mr. Learmount* put South African freight at 11s. 6d. *Mr. Bell* remarked that the last cargo from India had come in at Rs. 6 but that was not an economic rate: the difference between Indian and South African freights was that there was no ballast freight possible from Calcutta to Singapore because Calcutta was a terminal port. So India as far as freights went could not compete. Steamers from South Africa working up to Bangkok or Vladivostok would take almost any rate on coal as a substitute for ballast.

Mr. Bell said that he though Japanese freight was 7s. (=3½ yen) or 8s. *Mr. Learmount* thought there had been a cargo at 3 yen. *Mr. Marshall* said 4 yen was the last that he had heard. *Mr. Learmount* said that as to Japanese freights there had been a drop in exchange which *Mr. Marshall* described as serious.

As to Sumatra freights *Mr. Learmount* said it was a short run and cheap. Borneo was not so cheap. There were large stores of iron ore at Batu Pahat in Johore, and Japanese steamers brought down coal and then went round the corner to load ore: that was a great advantage to the Japanese coal. Similarly ships from South Africa came for sugar to Java. *Mr. Bell* remarked that was during June, July, August, the worst time for

shipping in Calcutta. *Mr. Thompson* said there was rice too, and *Mr. Charwood* added Philippine charters.

North Borneo freights *Mr. Learmount* put at about \$4 or 9s. 6d. a ton. That meant five days' steaming against 20 days from South Africa. South African freights were frequently as high as 14s.: on that day's wire they were 11s. *Mr. Marshall* said he could not give Sumatra freights because he was not a buyer: his firm sold for the Dutch Government who arranged their own freights. Australian freight he put at 11s. 9d. or 12s.

Mr. Bell asked whether it would be detrimental to the sale of South African coal if freights went up again to 15s., the level of a few months before. *Mr. Learmount* said that five months ago the c.i.f. price was 32s. but other coals were then relatively dearer, so that the extra freight then made no difference to South African sales. But if the freight now rose to 15s. it would help Indian coal. *Mr. Marshall* said that it would make the pendulum swing quickly. *Mr. Bell* remarked that 4s. a ton extra would still leave a low rate, too low for primary business. *Mr. Learmount* said that the 4s. would be a decisive point. In the last two years the limits for South African freight were 11s. and 14s. An extra 3s. would be a handicap. But it was a curious thing that simultaneously with South African freight the price of other coals also fluctuated.

Tonnage.—*Mr. Bell* asked if tonnage from South Africa were steady or only odd cargoes. *Mr. Wurtzburg* said that it was steady: it was so easy for a ship to come up and load a cargo, from Java for instance, and, *Mr. Thompson* added, from Australia at certain periods. *Mr. Marshall* stated that no steamer which they had up from South Africa had ever gone back to South Africa with a cargo: there was a steady supply of tonnage from South Africa. *Mr. Wurtzburg* agreed with *Mr. Bell* that for a twenty days voyage 22s. would be a reasonable freight from South Africa if the freight were fixed on an economic basis without consideration of the rest of the voyage. *The President* referred to the South African Coal Commission's report (paragraph 10) as showing that South African exporters considered themselves handicapped in the Eastern competitive areas by the difficulty of finding a return cargo for ships engaging in the business. *Mr. Marshall* thought that this might refer more to other ports: and Singapore was comparatively a small market for South African coal. *Mr. Learmount* said that there was no return cargo from Singapore to South Africa. *Mr. Marshall* said that they could count on space from numerous British lines. *Mr. Thompson* mentioned Norwegian tonnage and *Mr. Learmount* the German-Australian line.

Tonnage from Australia.—*Mr. F. C. Legge* asked if this were regular. *Mr. Learmount* said that it was not but it was not required so frequently: there was no difficulty in getting it when needed. *Mr. Marshall* said that Australian coals did not come in freely for bunkering purposes: the first cost was against them. At one time during the war Australian was the cheapest coal obtainable: but towards the end of the war the price went up and it had never been reduced. *Mr. Charwood* commented that ship-owners were not keen on Australian berths because of the labour difficulties.

Tonnage from Japan.—*Mr. Learmount* said that as to this they had no information. They bought c.i.f. from Japanese who arranged the freights.

Mr. Bell suggested that an important point was the case with which cargoes could be got down from India: it was an eight days' voyage against 20 days from South Africa. *Mr. Learmount* replied that this would be a distinct advantage: it was the only reason why personally he might be inclined to deal in Indian coal: it would not be necessary to buy so far ahead, which in the coal trade involved heavy risks. *Mr. Marshall* pointed out that they did not have to pay till the coal arrived from South Africa, and so they did not have to pay extra for the longer voyage. *Mr. Learmount* explained that South African coal was usually paid for 30 days after the bill of lading was signed: but the South African seller would put that on to the price of the coal—just as selling f.o.b. the Indian took so much off: the

Singapore preference for this way of buying was, he supposed, sentiment. He considered it a distinct factor in favour of India that Singapore could cable and get a cargo back promptly. *Mr. Marshall* said that this would put India in a favourable position if quality could be guaranteed.

As against this it was suggested that, the costs being equal, the London office of a Singapore firm usually preferred to manage the purchase of coal: in some cases they even bought the Australian coal.

E. C. H. CHARLWOOD, Esq., of Messrs. Adamson, Gilfillan & Co., Limited.

(Oral Evidence—Singapore, December 8th, 1924.)

I have no personal experience of Indian coal either at Singapore or Penang but I have obtained information from the records in our Penang Office. Between 1914 and 1916 we imported into Penang large quantities of Dishergarh coal. There was then a big demand for a fairly cheap coal at the mines: now they use either a locally mined coal (Rawang coal) or firewood: it is likely that the supplies of the latter are not inexhaustible, so there is possibly a chance for Indian coal in the north if the price is brought down. Borneo coal does not go up there: Sumatra coal may.

Banksimulla coal some years ago was brought into Penang on a railway contract: but now they use a local coal because they can get supplies of it as and when required and can finance it easily.

Borneo coals.—In Borneo the places which I know to export coal are Samarinda and Bandjermassim; Gunong Batu Besar is a mine belonging to the Malayan collieries. Borneo coals, I believe, vary very much in quality: they would be serious competitors only for the local consumers, being used as bunkering coals only by coasting steamers. But coal from one new mine (Teweh coal) which is now being floated is being used by the Messageries Maritimes for their coast steamers and has I believe been tested on their mail steamers.

Quotations for Indian coal in sterling.—There is a point arising out of our written reply to which I attach importance and that is whether it is possible to buy coal from India on a Sterling basis. That is how we buy South African coal; it means that the risk of the exchange is eliminated for the merchant here. South African coal is paid for in London.

Coke.—South African and English coke are imported into the Straits. While not a large market, there is a fair demand from local users, such as the local European Engineering Works, Chinese blast furnaces, etc., which the output of the Singapore Gasworks cannot fully supply. We have imported Indian coke on one occasion, but to compete with South African a cheaper c.i.f. price must be quoted; the comparatively high cost (taking into account the difference in qualities) is I believe due to the ruling freight rate, if this can be adjusted there is no reason why Indian coke should not find a market here.

South African coke obtains a cheap freight through being carried in the same bottom as coal cargoes, but there would appear to be no reason why Indian coke should not obtain a like advantage.

GILBERT DAY, Esq., of the Asiatic Petroleum Co., Ltd., Singapore.

(Oral evidence—December 6th, 1924, Singapore.)

My Company uses very little coal. It has a large fleet but mostly oil burning: five of the older ships burn coal, about 1,000 tons a month. It is

Australian coal. We have some steamers going down to Australia with oil in cases (not tankers: they have cargo-handling appliances): these come back empty usually but at times they load coal which we buy down there. We do not send that type of ship to India. All this business is fixed up in London: often we do not know beforehand that the coal is coming. The freight paid is merely a matter of adjustment between one department and another, and the adjustment is made at home without reference to us. It is Newcastle coal that we buy and the quality is quite satisfactory. We have also had Japanese coal and South African—usually from Durban, but the last lot from Delagoa Bay: this was some time ago.

As the purchase of coal is entirely arranged by our Head Office in London, we have little knowledge how far the factors of price and quality affect them, but we know that an important factor is the position of those of our vessels which are suitable for carrying coal.

**L. H. LEARMOUNT, Esq., of Messrs. Paterson Simons and
Company, Ltd., Singapore.**

(Oral evidence—December 6th and 8th, 1924.)

The Coal Trade of Singapore falls into three distinct categories:—

- (a) Home bunkering approximately 57 per cent.
- (b) Local shipping approximately 33 per cent.
- (c) Industrial purposes approximately 10 per cent.

Category (a) can be further sub-divided into (1) Owners' direct importations, and (2). Bunkers supplied through Agents.

The following figures will be of interest and may be taken as approximately correct.

	Per mensem. Tons.	Per annum. Tons.
(a) <i>Ocean going vessels.</i>		
(1) Owners' importations	25,000	
These are arranged by London and includes Blue Funnel, P. & O., B.I., N.Y.K., O.S.K., A.P.C., Indo-China and M.M.		
(2) Supplied through Agents by merchants	6,500	
	31,500	or 378,000
(b) <i>Local Steamers</i>	18,000	216,000
(c) <i>Industrial consumption</i>	5,000	60,000
TOTAL		654,000

My total of 654,000 tons is less than that shewn in the written statement of the Sub-Committee, viz., 668,000 tons: the difference would be due to Admiralty importations.

Transvaal Coal Owners' Association.—When the Director of the Transvaal Coal Owners' Association visited Singapore he told us that the collieries were controlled by the Association, which limited output to what could be sold and arranged that good qualities were provided for export. If too much coal were being raised the Association cut down the amounts for each colliery.

Sales ex ship.—I think a very important point which has not been made clear is sale *ex ship*: it is a change which outside the port has not yet been fully appreciated. It applies particularly to the local coals, which are coming in freely: there is one steamer every five days with 800 tons, another Company has three steamers each carrying about 2,000 tons which come in at frequent intervals and there is another coal which we sell in steamer loads of 1,800 tons: all this tonnage drops in at any time. The coal is sold *ex* these steamers and the result is that sales to local steamers *ex wharf* are practically non-existent. This means a tremendous saving in wharfage charges. I should point out that the shipowners know that their vessels are likely to be kept their full lay days at Singapore and no doubt make due allowance when arranging freight; for Sabang on the other hand, where no time is lost in discharging and where they unload 1,300 tons a day, freights are reduced; this lowers the c.i.f. Sabang cost. But it was the high wharfage costs here that enabled Sabang to kill our wharf business, and the reduction of about one shilling which we might get on freights by offering quick despatch would not compensate us for giving up the savings which result from sales *ex ship*.

Price at which Indian coal could compete in Singapore.—(To Mr. Bray.)—I have a cheap line of coal at present which is easily obtainable and easily sold. Why should I then handle Indian coal which I do not know and which may not sell readily?

(To Mr. Bell.)—If I were looking at things from the point of view of a prospective agent for Indian coals, I should say that the only method by which Indian exporters could get a footing in this market would be to pour in coal at cut prices. It should not take long for this to have its desired effect of getting the merits of Indian coal known, always provided that the quality is really satisfactory. Three cargoes would perhaps suffice.

No one here cares whether Indian coal comes in or not; so why should anyone go round pushing it? It is no use whatever sending down a man from India to talk about the merits of Indian coals: if Indian owners have faith in the quality of their coals, they must send shipments in for people to get a practical knowledge of them: the loss would not be for long, if the coal is really any good. If it cannot sell below \$12·00, it has not much chance even when the quality is known. Natal coal at \$13·00 is too dear for the majority of coal consumers. One would have thought that the difference in quality would be well worth the difference in price: but that is not the consumers' view. What India ought to do is to send in a few cargoes at \$9·00 or \$10·00 to get the coal known: it should sell readily at the former price: but, when it becomes known, it will be useless for the exporters to say "the coal on its merits is worth \$12·00 and that is our price:" people simply wouldn't buy it: but if they asked about \$11·00 (or Rs. 17-2 at present rates) then there would be a chance. I am speaking of course on present prices and exchanges. Personally I should not like to try Indian coal now at the same price as I pay for one of my regular lines; there would be a risk that it would not sell.

I should put \$9·50 as the maximum for trial cargoes of Indian coal—but others put it at \$10.

Japanese competition.—Japanese exchange is falling every day: since July 14th it has been falling steadily; 140 yen now go to the 100 dollars against 108 a short time ago. This is a very important factor in favour of Japanese coal. The level of the yen was artificially kept up by loans and so on, it is now falling to its natural level. The reason for the change is the reduction of exports after the earthquake, accompanied by increasing imports to repair the damage done.

Another point is that the appreciation of sterling may react on the prospects of Japanese coal. The pound has now risen to 19 shillings gold. Singapore currency is based on sterling and so appreciates with the pound. If the yen is worth 2 shillings and a farthing when the pound is worth 19 shillings, I imagine it would be influenced by the pound going up to twenty shillings.

Lighterage Charges at Singapore.—The ordinary rate paid would be 40 cents. the ton, for transfer of coal from one steamer to another or to wharf. If 1 coal one ship from another, the collier pays for putting the coal into the lighter: I pay the lighterage 40 cents and the cost of putting on board: trimming into bunkers would be 15 cents: total cost may be put at a dollar nominally.

As to interest and insurance they vary with the value of the coal. My figure for interest would be higher than that assumed when a total cost of \$2.60 was given by other members of the Sub-Committee yesterday.

(To Mr. Bray.)—It would be safe to put the saving from loading from steamer to steamer at \$1.50. It might be more: for it saves the pilotage charges payable if the steamer goes to the wharf and it saves getting up steam possibly to move the steamer; if one delivers into lighters alongside there is no expense to ships at all.

Weighing coal.—It is necessary to weigh even if one takes the 2 per cent. allowance on freight: my last cargo for instance was sold to ten different consumers. I could not just deliver the coal into their lighters without knowing how much I was giving. We have an option of weighing one basket in five or one in ten at the wharf. Check is exercised at the scales by our man being present with the Harbour Board's man. If the wharf takes over 1,000 tons, it is under an obligation to deliver 1,000 tons. But if we do not weigh, the wharf takes no responsibility and we have to bear any shortage. Besides Singapore has a good reputation for giving good weight. We do not check by lighterage draft or rely on measurement at all. If an engineer protests that by measurement he has not got full weight, we reply that he should have sent up his tally clerk to the scales. This refusal to go by measurement is reasonable, because Natal coal varies from 39 c.f. to 43 c.f. to the ton. It may be a fact that previously Singapore had not a good reputation in this respect.

Coke.—Natal coke finds a fairly big sale in Singapore, because it is carried for the same freight as coal: on the other hand all English coke has to pay a high freight, 30s. to 35s. a ton. If South African coke had to pay the same freight as English, it would disappear off the market. We are the only importers of South African coke. I cannot say what the prospects of Indian coke would be in Singapore, but the gas works here will not use Indian coal because, they say, they have to use more of it to get the same amount of gas and then they are left with so much coke that they cannot sell it all.

Penang as a market for coal.—Penang is a very small market for coal of any sort. The Straits Coaling Company and the Straits Steamship Company are the only two consumers of any importance: the railways at present draw their supplies from local mines.

D. LEWIS, Esq., Borneo Co., Ltd.

(Oral Evidence—Singapore, December 8th, 1924.)

My firm has branches in Siam, Serawak, Java and the Federated Malay States. We handle anything in the way of imports and exports and engineering: Borneo Motors is a subsidiary company and we have brickworks at Singapore. The coal we use at the brickworks is Malayan Small coal, cheap stuff: we use there from 460 to 470 tons per month. Ten or twelve years ago we used to import fair quantities of Dishergarh coal for local sale and for our chartered ships which carried teak to Bombay and sometimes to Calcutta whence they brought back cargoes of coal. When the coal embargo made it impossible to get Dishergarh our ships went to Padang: they found supplies there very satisfactory and so gave up coming to Singapore. I cannot say how much coal our steamers use: they are run by our Bangkok Office. They

are Norwegian ships of about 650 tons. They coal at Padang for the run up to Bangkok and back and then coal there again for the run to Bombay.

I do not know the technicalities of coal at all. But I know that Dutch Borneo coal suits us at the brickworks and that it would not pay us to buy better. For the brickworks we should not want any Indian Lump coal: we do not burn any good quality coal there, but use Malayan lignite mixed with some new Dutch Borneo coal: it comes from Pamoekan bay and Samarinda.

At one time we were agents for Holts and we did not do business for any competing lines. When Holts opened up their own office in Singapore we lost their work and had no other line to fall back upon. Other firms can import coal and, if it sticks, use it for bunkering. We cannot. When the embargo was put on Indian coal we imported Japanese. But since then we have taken no interest in coal, except for a little Australian coal against firm orders.

Coke.—We import small quantities of English coke, which is used in local foundries. The selling price is between \$38 to \$40 a ton. At one time I contemplated trying Indian coke, but from inquiries I gathered that our Chinese purchasers would rather stick to Scotch coke and I was afraid to risk trying them with Indian.

A. McE. MARSHALL, Esq., of Messrs. McAlister & Co., Ltd.

(Oral Evidence—December 8th, 1924, Singapore.)

The only Indian coal of which I personally have experience is Admiralty Standard, which does not appear to have any particular quality.

The Committee requested me to bring with me the Agent of the K. P. M. (Koninklijke Paketvaart Maatschappij). This gentleman explained to me that his firm is not at present interested in Indian coal. They already have their own coaling arrangements both in Singapore and Java.

The prohibition on export of coal from India came simultaneously with a heavy fall in price of Japanese coals.

Grading of Indian coal. I personally was not in favour of the grading of Indian coals, as all merchants had had a very unsatisfactory experience in connection with Admiralty Standard. I preferred a pit certificate, but I did not then understand the position in connection with the export coal trade of India. I understand now that Indian coal is sold according to seam and not according to mine, as is done in many other coalfields. Under the circumstance I should think that grading is necessary. I have no doubt that the Indian Government would make adequate arrangements to protect buyers of coal from what might be termed the possibility of sellers hiding behind a certificate of grade when quality delivered may not be up to standard.

Coals popular in Singapore.—The coal at present holding the strongest position in the market of Singapore is African coal. Local coals, however, are obtaining an increasingly strong hold on this market, and on account of their close proximity to Singapore are proving serious competitors of South African coals.

The miners of these local coals are now getting down on deeper seams, and the quality is undoubtedly showing a marked improvement. It is a great advantage to a merchant here to obtain control of a local coal of good quality as he is thus saved heavy capital outlay and market risks which are necessary when buying a coal that is sea-borne from a great distance. A further material advantage is that a merchant can purchase his requirements in small quantities. This is most important.

My firm are the Singapore Agents of the Dutch East Indies Government coals. These are as follows:—

1. *Lematang Admiralty*.—A Sumatra coal which is mined at the Bockit Asam Mine, and is exported from the port of Kertopati. This, we think, is the best quality of bunker coal at present imported by merchants into Singapore. It brings a higher price than other coals including Natal coals.
2. *Ombilin coal*.—Port of shipment, Padang—also a Sumatra coal of high grade, though slightly below Lematang Admiralty.
3. *Stagen steam*.—A high class quality of Borneo coal—port of shipment Stagen.

One great advantage of obtaining one's coal requirements from local coals is that it comes at regular short intervals in small carriers, and it is in consequence possible for a merchant to dispose of the bulk of his purchases direct *ex ship* in the roads and so to avoid the heavy landing and wharf charges entailed on large cargoes borne from a long distance overseas.

Prospects of Indian coal in Singapore.—On account of its geographic position, Singapore is a natural consumer of what we call "*Local Coals*." The name naturally indicates coal from mines in close proximity to Singapore. This, however, should give Indian coals a great advantage over African coals.

It therefore appears that it is a matter for Indian coal merchants to again push their way into this market. It may be an expensive operation on account of the opposition they have to contend with, but is one that must be left to the Indian coal merchants to decide whether it can be done on economic basis.

I personally do not think that Indian merchants would experience any opposition from general importers of this market, as these importers are purchasing only to resell. They consequently must purchase in the cheapest market taking quality into consideration.

Mr. H. C. READ.

Informal examination at Calcutta —Friday, November 7th, 1924.

I have been Mining Engineer for 16 years in India and for the past five years I have been connected with the commercial side of the coal trade. Prior to that, I was Professor of Mining Engineering in the Sibpur Engineering College and for some time (5½ years) I was Manager of a coal mine up-country. I have recently been connected with coal firms in Calcutta. I went on a holiday trip to Singapore, and during that time I studied the coal position there.

Consumption of coal in Singapore.—While in Singapore, I discovered that during the war most of the coal that went to Singapore was naturally from India and the biggest importer was a man called Senda of Senda Barnett & Co. (Calcutta). He was supposed to be, as far as I could gather the figures, importing about 70 thousand tons of coal per mensem during the war.

But at present the consumption of coal is very much less in Singapore owing to many of the ocean-going steamers bunkering at other ports, for example Colombo, and also owing to steamers coming from Japan carrying their own bunker coal. I visited three firms in Singapore; the principal firm there connected with the coal trade is Messrs. Patterson, Simons & Co. who import practically all the coal required in Singapore from all ports of

*Mr. Read's evidence as to Singapore is printed here for convenience of reference. He also gave evidence as representative of the Indian Mining Federation.

the world. Mr. Senda has dropped out but the Mitsui Bushan Kaisha are importing Japanese coal for their own steamships. The present turn-over in Singapore varies from 35 to 50 thousand tons per mensem, but I think it will be better to deal with the lower figure, viz., 35 thousand. Of this 15 thousand tons is contracted for by the large ocean-going steamers under home contracts; the other 20 thousand tons are required for locally owned coasting steamers and industries such as tin smelting; a certain amount is also bunkered by coasting steamers at Sabang and other ports in Java. So, in Singapore the total consumption may be taken at about 35 thousand tons per mensem. From Senda's figures, exclusive of ocean-going steamers, Singapore requires 15 thousand tons of coal per mensem, for locally owned coasting steamers and otherwise.

I was in a position to examine the coal at the coal stocks from appearance and otherwise, and also to estimate the amount of stock. My estimate was one hundred thousand tons and Paterson, Simons & Co., and Senda & Co. both told me that at Singapore anything beyond 70 thousand tons would be an excess quantity and that a certain amount of coal which I did not see was locked up in two hulks for being loaded over side into other ships. Their total estimate was 120,000 tons in stock, against my estimate of 100,000. Of this the principal portion was Burnside, a Natal coal. A certain amount was Natal Navigation, but not much, for this coal is taken by home-going steamers under contracts and therefore they do not stock very much of it there.

Competing coals in Singapore.—As regards the qualities of coal with which we have got to compete in Singapore, there are two qualities of South African coal in Singapore, viz., Burnside (first class) and Witbank. Besides there is Australian coal which is used for tin-smelting. It carries a high percentage of volatiles. There are also the Japanese coals called Miike, Sakito and Namazuta. Again, there is Chinese coal, which breaks into small bits. Then come Native Coals, that is to say, those coming from Borneo and Sumatra: and these are principally delivered over ships' sides to small steamers. These are the various kinds of coal with which we have to compete. Of course, there is the Admiralty coal.

There is a colliery in Malay, called Rawang, but they do not send in any coal to Singapore. They are raising only 4 thousand tons per month, of which 2,500 is used by the railways and the remainder 1,500 tons is used by the local industries: some of it goes as far as Bangkok with which railways are connected.

Of the coal in stock a little is Indian. I did not see it: it was said to be on the hulks. It is the remains of a cargo of 10,000 tons of Dishergarh coal sent down by Messrs. Andrew Yule & Co. from Calcutta. I was told that the whole of that cargo was sold prior to its arrival but unfortunately the coal caught fire in ship and the buyers refused to take delivery of it. The coal is being sold piecemeal from the hulks. This is the largest shipment ever made on one ship from Calcutta.

Prices.—As regards the prices (c.i.f.) for these various coals, Natal coal was selling at 12-50 dollars, the rate of exchange being Rs. 156-8 for 100 dollars, which works out to Rs. 19-10 per ton; Australian coal at 15 dollars or about Rs. 23 per ton; Japanese No. 1, at 12-50 dollars or Rs. 19-10 per ton. Japanese No. 2 at 11 dollars or Rs. 17-3-5, i.e., in round figures Rs. 17-4 per ton. Chinese (Manchurian) coal at 11 dollars or Rs. 17-3-5 (i.e., Rs. 17-4 per ton); and lastly we have native coal the price of which varies from 10 to 12 dollars, that is to say, from Rs. 16 to Rs. 18-12-6.

There was no large selling of Indian coal—it was being got rid off piecemeal. Messrs. Andrew Yule & Co. sent out their coal when the freight was high, viz., Rs. 9. The present freight is about Rs. 6 to Rs. 6-8 per ton for Singapore from Calcutta.

(*To Mr. Banerjee.*)—They say that Indian coal of good quality is quite saleable ex ship at much the same price as quality No. 2 of Japanese coal, i.e., Rs. 17-4 per ton. Now to get down to that it means that we have got to sell our first class coal f.o.r. at Rs. 5-4 a ton.

(*To Sir Rajendra Nath Mookerjee.*)—In Calcutta, Dishergarh coal is more esteemed than Jharia: it fetches a rupee more. Jharia costs As. 8 to Re. 1 less to get: but railway freight to docks is As. 12 less for Dishergarh to Calcutta. So the cost of Jharia coal may be As. 4 cheaper on the balance. So Jharia coal has a better chance to compete with South African coal in Singapore than Dishergarh.

Comparative merits.—I do not think that Singapore has much conception as to what kind of coal is wanted so far as analysis is concerned, because they do not seem to understand the different kinds of coal. What they want are competitive coals against South African and Australian coals of the same standard. If I may be permitted to divert for a moment to the technical side of the matter, I think that the only coal that we have in India that can compete with South African coal is first class Jharia such as Jardine Skinner's (Bararee). Dishergarh cannot: but it can compete very well with Australian coal. I have with me the results of several analyses of South African coal made entirely from the consumer's point of view, which it is interesting to compare with those given in the Report of the South African Coal Commission. The report shows some of those Natal coals giving as little as 5, 6 or 9 per cent. of ash. You will see that the lowest for ash in the printed analysis (page 63 of the Report) is 5.76 per cent, which is for St. George's; but the analysis from the consumer's point of view, made from average samples, the same from which we would analyse here, gives for St. George's 1.4 moisture, 18.1 volatile matter, 68.2 fixed carbon and 12.3 ash. The average ash percentage for South African coal comes to 13, which is also the average for our first class Indian (steam) coals. Now, it must be so, because coals which belong to the same series, to the same age and to the same rocks, cannot be of different qualities. But the Singapore consumer's point of view is that South African coal is 10 per cent. better.

Till now I have omitted the Japanese coal. Dishergarh coal is absolutely similar in quality to Australian and Japanese coal. The latter are no better than Dishergarh or Raniganj coal. So we have got two classes of coal with which we have to compete: (I) South African, (II) Australian and Japanese. The former is no better than first class Jharia. Witbank, which is in the second class, a Transvaal coal, shows an average of 16 per cent. of ash; our second class coals show about the same average, 16 per cent. Therefore our second class coals can easily compete with Witbank.

The Indian coals to be compared with Japanese coal are Dishergarh or Raniganj. I would refer to a paper read by Colonel Cunyngame Hughes before the Mining and Geological Institute, the figures in which, so far as analysis is concerned, I regard as substantially correct.

In my opinion, Dishergarh is the best of all the coals coming from the Raniganj field. I may repeat that the first class Japanese and Australian coals are no better than Dishergarh.

One thing that I noticed was that Witbank coal was very well loaded. It is a very hard coal and I take it that our second class coal can be loaded exactly in the same way. Down in the docks you can always tell the difference between first class and second class Jharia coal by its appearance: but compared with Witbank, 1st class Jharia would look infinitely better as far as appearance goes.

Indian coal can compete, so far as quality is concerned, with any other coal entering Singapore; it is a question of price—but there is also condition to be considered.

I heard that a cargo of mixed coals was sent down to Singapore at the beginning of this year, when Singapore was short of coal, by a firm named Sarda & Co.: a man of that firm followed the cargo up to Singapore,

walked into Messrs. Patterson, Symons & Co.'s office and offered to sell the cargo but they refused to buy it. The second cargo that has been sent is the one from Messrs. Andrew Yule & Co.

(*To Mr. Stuart Williams.*)—There is more wastage when the coal is handled by crane than when it is dumped, at the docks. In crane-loading there is a tremendous amount of breakage. The hoppers and skips are iron-shod and as each wagon is emptied there is a cloud of coal-dust. Further, there is breakage on the central bar of the skip. There are two handlings at the ship's side: and though the coal is supposed to be lowered into the hold it is actually allowed to drop from above hatch-level. Much breakage could be avoided by lining the hoppers and skips with wood.

It is prejudice mainly that prevents imports of Indian coal and this is due to former bad loading.

(*To Mr. Bray.*)—I agree that if Indian coal is compared, as it should be, with first class Japanese or Natal coal which sells at Rs. 19-10, there would be a margin of Rs. 7-10 as f.o.r. price of Indian coal per ton instead of Rs. 5-4 if we get over the prejudice.

(*To Mr. Bell.*)—I have said that the first class Japanese and Australian coal are no better than Dishergarh, that South African coal is in no way superior to our first class Jharia and that "Indian coal of good quality" is saleable at the same price as second class Japanese coal. I draw a distinction between Dishergarh and first class Jharia coal. They are totally different qualities of coal, from a technical point of view. It is contrary to established ideas in India but personally I place first class Jharia above Dishergarh. As regards placing first class Jharia and Dishergarh together, may I explain a bit technically? The analysis of Jharia coal shows about 20 per cent. volatile matter, 67 to 70 per cent. carbon, while Dishergarh gives about 34 to 35 per cent. of volatile matter and only 53 per cent. of carbon. The real heating value of coal lies in its carbon contents but high volatile content is useful in boilers because it gives a long flame. If you are using a forced or induced draft you would want coal with a heavy percentage of carbon. For smelting purposes, such a tin smelting, brick burning and glass manufacture, a long flame is required, and therefore you would use Dishergarh. But the calorific value of Jharia No. 1 coal is always 400 to 500 calories higher than Dishergarh—Bararee coal gives 7,200 to 7,300 calories. But you lose heat if you use it under wrong conditions.

(*To President.*)—When I say that Jharia coal is better than Dishergarh, I mean only for a specific purpose.

(*Mr. Bell.*)—When I say that Japanese and Australian coal are no better than Dishergarh, I have in mind first class coal. I am referring to coals such as Milke and Namazuta. They are equivalent to Dishergarh coal for practical purposes. As regards South African coal, I may say that it is a short-flame coal with a higher percentage of carbon and can only be compared with first class Jharia. For bunker purposes South African or first class Jharia would be better than Dishergarh or Japanese coal, provided the boiler is set for the purpose.

As regards the distinction between "Indian coal of good quality" and second class Japanese coal, I would explain that "Indian coal of good quality" was the phrase used by Singapore. They do not know what a really good quality Indian coal is like. During the war all the really first class Indian coals were kept in India and shipped only in mixture with inferior coals.

They have not seen first class Indian coal for years except in mixtures.

The three firms that I approached made the remark that "Indian coal of good quality" is saleable *ex ship* at much the same price as second class Japanese.

I consider that coal which is of no better quality than first class Indian is selling at Rs. 2-6 per ton higher than the price suggested for Indian coal.

(*To Mr. Stuart Williams.*)—The fire in the cargo of coal shipped to Singapore was due to bad luck—it was not shipped at the right time of year

and too much coal was loaded in the one boat. A cargo of ten thousand tons of Dishergarh coal was too much for one ship to carry.

As regards breakability, I do not think that, speaking generally, it would be correct to say that quality for quality, Indian coal compares unfavourably with other coal: but Witbank coal (a Transvaal coal and inferior to Natal coal) does not break so much.

Dumping leads to breakage, but arguments in favour of dumping are that (1) it prevents demurrage on the ship, and (2) when loading from wagons you cannot supervise quality and reject bad coal: you have to load whatever comes. There is always a certain amount of coal which ought to be rejected but the Port Commissioners permit of no rejections once the wagons are alongside the ships.

Native coal.—Another point is that native coal is being used largely. You will probably discover in Singapore that this native coal is exceptionally good and from the figures of analysis, which I have, I find that it entirely surpasses Indian coal. The only difficulty is that it contains high moisture and works a bit small. In Singapore it is only a matter of time before native coal collars the market there. The people in Singapore think that it will take 4 or 5 years and that Indian coal has no chance. This coal comes from Borneo and is known as Dyak coal.

(*To Mr. Banerjee.*)—The present output of Dyak coal available is about 5 to 6 thousand tons a month. A number of boats are now bunkering it. There are four collieries as far as I could gather; one at Sarawak, one in British North Borneo and two in Sumatra.

There may be more collieries opened up in order to collar the Singapore market. As far as I remember, one colliery, viz., Cowie Harbour Coal Company raised during the past six months 33 thousand tons or an average of about 5 thousand tons per mensem. This coal company used to raise 6 to 7 thousand tons per mensem, but they had some trouble with floods and fires. The analysis of the best native coal shows only 3 per cent. of ash, I saw several reports from Chief Engineers of ocean-going steamers, showing 5 tons of ash in 100 tons of coal in actual use. The only difficulty with this coal is that it has a very large percentage of moisture, viz., 8½ per cent. and burns fiercely. (The volatiles constitute 20·92 or 21 per cent. on an average and carbon 67·50 per cent.) Owing to this they had to pull their boiler bars to the front so as to prevent the burning of the boiler plates and they are having very good results.

Mr. G. W. A. TRIMMER, M.Inst.C.E., M.I.Mech.E., M.Inst.T., Chairman, Singapore Harbour Board.

Note of informal discussion on December 5th, 1924.

Mr. Trimmer said the Harbour Boards were only small consumers of coal. At present Japanese, Australian and South African coals were being used for floating craft and railways, Enyati coal only being used in the Electric Power Station at present although last year a cheap charter was obtained for 5,000 tons of Welsh small coal.

Charges at Singapore.—Asked as to lighterage charges, Mr. Trimmer stated that the cost of loading into lighters and lighterage to the Roadstead would be approximately \$1·40 per ton, but for some 2 years past hardly any coal had been shipped by aid of the Board's lighters.

Most of the coal discharged from vessels in the Roadstead at the present time is conveyed in native owned lighters to storage dépôts up nearby creeks.

Neither the Government nor the Board levy any port, wharfage, or any other charge on this coal or the vessels conveying it.

Messrs. Alfred Holt (Blue Funnel Line) have imported their own coal chiefly Japanese either by their own vessels or chartered vessels, which

coal is stored on the Board's premises, but one of their associated lines "the Straits Steamship Co., Ltd."—that now owns practically the whole of the coastal services—coals its vessels in the inner harbour: small colliers with coal from Borneo transfer their cargoes into lighters, and from lighters the coal is loaded into bunkers direct to their vessels, thus avoiding any wharfage or port charges on this coal. More coal is now discharged in the Roadstead than formerly.

Methods of handling coal at Singapore.—As to the prospects of the provision of mechanical coal-handling plant at Singapore, Mr. Trimmer stated that the Board's executive in the year 1917 placed a proposal before the Board for the establishment of a special coaling wharf at which all vessels could be bunkered. This proposal was not proceeded with owing to the peculiarities of the trade of the port, there being some twenty owners of the coal and about twenty qualities of coal, and further, because Singapore is essentially a transshipment port and not a terminal port. Vessels generally only discharge a portion of their cargoes and load a small quantity of cargo, compared with their capacity. The Board therefore aim at bunkering vessels at the wharves whilst cargo handling is in progress, thereby avoiding the moving of vessels to a special berth to take in bunkers after cargo working is completed, the coal storage grounds being situated directly behind the Transit Sheds, mainly for this reason.

It is not always possible to berth a vessel opposite her coal heap when bunkering, and therefore, in any mechanical coaling-appliance to be installed, it would be necessary to design it so that the coal could be lifted from the storage heap and conveyed parallel to the wharf until opposite the vessel, and then conveyed past the Transit Sheds to bunkers. He had hopes of obtaining a satisfactory plant which would be cheaper than man handling and cope with some of the Board's coal traffic.

Sabang had the advantage of being equipped with mechanical appliances, but vessels had to deviate from their course to take in bunkers there, and time was therefore lost. Sabang competed to a certain extent with Singapore, but Mr. Trimmer had no information as to the cost of coal at that port or the cost of handling same.

In Singapore the rate of clearing colliers entering the port depended on how they arrived. Recently several importing firms took the opportunity of cheap charters from South Africa and several Clan Line steamers arrived within a few days, which steamers, in addition to other colliers arriving, placed upwards of 60,000 tons in the port at one time: this could, of course, not be handled expeditiously, and consequently considerable delay ensued, resulting in unjustifiable complaints from the interested coal agents.

The Board discharge two coal vessels at a time; but preference is always given to vessels bunkering.

The coal is discharged by Chinese coolie labour, two men carrying a basket (containing approximately 160 lbs.) slung on a pole which is carried on the shoulders of the coolies. The payment to the coolies is at a rate per basket as they pass the scale, the rate of payment varying between 2 and 6 cents. per basket according to the length of carry, difficulty of walking the gangways to and from vessels, height of the stack, and the amount of work on hand.

The coolies are supplied by a sub-contractor of the Board, but at certain sections of the Board's wharves the handling of general cargo is done by the Board's own labour force.

As regards the rate of discharge of coal, it varies considerably; on some days no coal is awaiting discharge, and bunkering is also very irregular.

As an illustration, Mr. Trimmer gave the average for the month of July 1924 which was, per day, 1,467 tons discharged, and 853 tons bunkered, but stated that in some months the figures would be much lower. On December 8th 2,177 tons were bunkered and only 543 tons discharged. On December 3rd 1,918 tons were discharged, and 789 bunkered, and on December 4th 2,092 tons were discharged, and 1,637 tons bunkered.

As a general rule the Board's rate of discharge exceeds the usual charter party rate of 500 tons per day. A tendency, which he believed was on the increase, was for Importers to attempt to dispose of a portion of their cargoes in the Roadstead, and deposit the balance on the Board's premises, thereby saving wharfage charges on the portion discharged *ex vessel* in the Roadstead. The Board are at times expected to accelerate discharge to make up for lost time on coal discharged in the Roadstead.

Mr. Trimmer said that discharging and bunkering by baskets, as carried out in Singapore, did not break up the coal to any appreciable extent.

Comparative merits of Indian and other coals.—Excluding the British India Company's imports of coal, there had only been two cargoes of Indian coal stored on the Board's premises during the past 2 years. The first was in June 1923 *ex S.S. "Avonmede"* which was a speculative cargo brought down to the order, he believed, of a Chinese merchant, who could not dispose of it, and it was left for the Bank financing it to dispose of it as best they could. The second lot was some 11,000 tons shipped, he believed, by Messrs. Andrew Yule in the S.S. "Tjkarang." This coal caught fire *en route*, and was unloaded and stored on the Board's premises, and the greater portion was still lying at the wharf.

Singapore Imports of Coal.

Year.	Harbour Board's Wharves.	Roadstead.	Total Imports.
			Tons
1906	606,491	82,619	689,110
1907	545,909	43,801	589,710
1908	563,067	63,036	626,103
1909	480,087	100,841	580,928
1910	532,534	88,530	621,064
1911	526,468	131,827	658,295
1912	583,782	116,354	700,136
1913	685,129	163,537	848,666
1914	637,023	129,455	766,478
1915	496,176	106,752	602,928
1916	523,879	108,920	632,799
1917	536,508	27,943	564,451
1918	409,833	34,138	443,971
1919	406,000	62,070	468,070
1920	452,046	219,589	671,635
1921	433,461	100,779	534,240
1922	390,923	139,510	530,433
1923	273,211	292,743	565,954

It may be assumed that the same quantity of coal as is imported at the Board's wharves is delivered to ships' bunkers, except about 5 per cent., which is delivered to town.

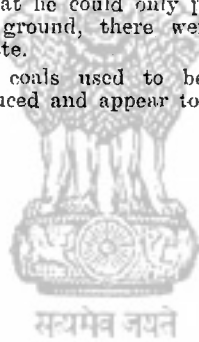
South African coal, Mr. Trimmer was of opinion, got its footing in Singapore mainly owing to the good quality of the coal which is allowed to be exported. This coal enjoys an excellent reputation, no doubt due to the great attention paid to its grading; for under the Coal Grading Act of 1922 no coal may be exported unless it has been officially approved, and has passed the standard of screening and cleaning which is laid down in that Act.

The Act, he believed, provides for the appointment of a committee, which issues grade certificates for all bunker and export coal and may withhold this evidence of approval if it considers that there is a liability to spontaneous combustion.

Also, he considered, another feature was the question of freights; Clan Line Steamers which were proceeding to Australia in ballast appeared to have taken up cargoes of coal to Singapore en route to Australia.

Up to the time when the embargo was imposed Indian coal found a fairly good market in Singapore, but the quality of the two consignments above referred to was not so good, and the grading unsatisfactory. In this connection Mr. Trimmer said that he could only point out that in the "Tjikarang" cargo, now on the ground, there were large lumps of red shale material and dark brown slate.

Japanese and Australian coals used to be largely imported, but the imports of these are now reduced and appear to be replaced by South African coal.





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